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CHANGES IN THE EXPORT OF AGRICULTURAL PRODUCTS
FROM YUGOSLAVIA

SUMMARY:— I. *Agricultural exports from Yugoslavia*:— Changes in quantity. — Changes in value. — Principal countries of destination. — The principal agricultural exports. — II. *Causes of changes in Yugoslavian agricultural exports*:— The agrarian reform and the post-war period. — The world crisis and government intervention. — Development of a new trend of agricultural production. — Future prospects for Yugoslavian agricultural exports.

Approximately 81 per cent. of the population of Yugoslavia (some 15,600,000) are engaged in farming, while agricultural products averaged from 48 to 52 per cent. of total exports during the last twenty years. These figures show clearly that this essentially agricultural country is largely influenced in its economic and social evolution by the condition and development of its agriculture and, consequently, its agricultural exports.

During the last ten years trade between Yugoslavia and other countries has undergone a complete change both in quantity and quality, more especially as regards agricultural products. This transformation, due partly to agricultural and partly to other developments, has had both material and social repercussions (1).

The most notable change was in regard to countries of destination. Yugoslavian exports were still limited to central European markets but went to different countries. The causes of this evolution cannot be fully dealt with in the present article, but in order to give some idea of the changes that have taken place in the export of agricultural products from Yugoslavia it is only necessary to mention the *facts*, with a brief reference to the *causes* which have contributed to this change.

(1) For changes outside the sphere of agricultural production see, by the same writer: "The industrialization of agricultural countries of south-eastern Europe" in the *International Economic Review*, Brussels, July 1938, and "Triebkräfte wirtschaftlicher Strukturänderungen in Jugoslawien", *Weltwirtschaftliches Archiv*, Kiel, September 1938.

I. — Agricultural exports from Yugoslavia.

Changes in quantity.

The agricultural products of Yugoslavia vary considerably in quality and quantity from year to year. Wheat crops, for instance, vary between 11 and 37 million quintals and maize between 18 and 51 million quintals, while the total area under crops gradually increases in proportion to the increase in population.

Even in periods of poor harvests, however, Yugoslavia has never ceased to export wheat and maize. The export of other cereals is so unimportant that it can be disregarded. Even after the disastrous years of 1921, 1923 and 1927, when wheat production fell to 12, 16.2 and 15.4 million quintals respectively, and maize production to 18.1, 20.6 and 21.0 million quintals respectively, Yugoslavia's agricultural exports, consisting up to two-thirds of cereals, were very considerable.

Although Yugoslavia constantly exports cereals and other agricultural products the volume varies between very wide limits. During the years 1925-26 exports reached the figure of 14 million quintals per annum. After the scanty crops of 1937 they fell abruptly but rose again to 9 million quintals. After 1932, having fallen to 4,900,000 quintals they again rose to 9 million quintals. It is not surprising that an agricultural country, whose economic success depends to so largely upon natural factors, should have violent fluctuations; the remarkable fact is that the exports are never entirely suspended, as is frequently the case in other countries.

The quantities of various classes of exports each year are definitely interdependent. In one case only was this rule broken, viz., in the year 1935-36, when the export of animal products declined while that of vegetable products and of the products of agricultural industries rose. This was entirely due to the fact that sanctions were then being applied against Italy and may be regarded as the exception that proves the rule. Briefly, the flow of agricultural exports varies in volume between extremely wide limits but never entirely ceases: it shows on the whole a tendency to increase.

Changes in value.

The position is not quite so simple and clear when it comes to considering the changes that have occurred in the *value* of exports of agricultural products. Such changes depend not only on Yugoslavian production but also largely on prices on the world market, which in their turn are affected by supply and demand. Partial independence of prices on the world market was possible for Yugoslavia only after trade with Germany had been regulated by the treaty of May 1 1934, which came into force on June 1 1934 and was supplemented by the additional agreement of May 1 1936. Previous treaties of the kind had been that with Italy of July 14 1924 supplemented with numerous additions in 1932, 1934, 1936 and 1937, and that with Austria (treaty of March

1932) and with Czechoslovakia (November 1928, supplemented December 10 1936). This independence could however be achieved only in respect of quotas and groups of commodities as fixed by these treaties, especially cereals, livestock and livestock products, eggs, poultry, fish, certain fruits, etc. Prices of all other exported agricultural products came under the direct influence of world market prices which were nearly always below production costs of Yugoslavian products. This was the case for alcohol, sugar, flour, chilled meat, butter, cheese (apart from "Kačkavalj" cheese which is not made in Western Europe), fats, beans, fruit, hops, hemp, tobacco, etc. Under the pressure of world market prices, it has been quite impossible to export certain products, such as alcohol, sugar and flour (this last up to 1937), and the other commodities just enumerated could be exported only to a limited extent.

The much greater fluctuations in the *value* than in the *volume* of the agricultural products exported from Yugoslavia are thus due to two factors: the price situation on the world market, in connection with which account must be taken of the considerable fluctuations in the value of the dinar at the period of inflation (1920-22) and of the deflation which followed up to 1925 and subsequently up to the stabilisation of the currency in 1931, and secondly, variations in the volume of the various exports, which in effect depend on variations in harvests.

The value of the exports of agricultural products was thus at its lowest level in 1920-21, amounting to some 800 million dinars, and at its highest level in 1925-26, *viz.*, 5,960 million dinars; thus in the most favourable year the value was seven times what it was in the least favourable. It may be noted in passing that in 1924 the aggregate value of all Yugoslavian exports reached the highest figure from the creation of the State to 1937, *viz.*, 9,538 million dinars and that in 1925 total exports were still worth 8,904 million dinars and were maintained at a level of about 6 to 7 milliards of dinars until, in 1933, the effects of the great depression brought exports down to a value of 3 milliards of dinars, to rise only gradually to 6,200,000,000 dinars in 1937.

Principal countries of destination.

In world trade Yugoslavian exports have no special importance, as they represents barely 0.5 per cent. of the total. They cannot therefore exercise any influence on the world market and in consequence market conditions simply have to be accepted.

On the other hand, in Central Europe (understanding by this term Germany, Italy, Czechoslovakia, Poland and formerly also Austria) Yugoslavia is a factor which cannot be overlooked. With Hungary, Romania, Bulgaria, Greece and Turkey, Yugoslavia however forms a community of the "agrarian States of South Eastern Europe", which resemble each other in there economic and social structure; within this group trade in agricultural products is only considerable between Greece and the other Balkan States; between the other members of this group both the volume and value of such trade are insignificant.

The whole foreign trade of Yugoslavia gravitates towards Central Europe, about 60 per cent. of the value of its exports going to Central European countries and 60 per cent. of its imports coming thence. Only in the last few years has a change in the direction of foreign trade been to some small extent noticeable with the development of exports to the Levant and to other coasts of the Mediterranean (Algeria, Morocco, Tunisia, Malta, Egypt, Palestine). This trend of economic expansion may well continue, and so gradually free Yugoslavia from its economic dependence on Western Europe. For the time being no great attention is paid to such a strengthening of trade relations with the Near East, but it would be a mistake to ignore the possibility (1).

Principal agricultural exports from Yugoslavia into Germany, in 1937.

(Total value 1,361 million dinars)

Wheat	278.9	millions of dinars
Maize	123.0	" "
Beans	8.5	" "
Grapes	4.7	" "
Apples	11.0	" "
Plums (fresh and dried)	11.5	" "
Hemp	49.8	" "
Tobacco	7.1	" "
Oilseeds	1.0	" "
Horses	4.7	" "
Cattle	13.3	" "
Pigs	40.6	" "
Poultry (live and killed)	50.6	" "
Fresh pork	59.7	" "
Pig-fat	86.5	" "
Eggs	50.8	" "
Feathers	49.8	" "
Hides and skins	20.3	" "
Other agricultural products	49.7	" "

Total . . . 911.7 million dinars, or 70 per cent. of the value of total exports.

Up to the time of the application of sanctions against Italy, in 1935, Italy, taking 20 per cent. of Yugoslavian total exports, was constantly the principal market for Yugoslavian products, especially agricultural products.

(1) See by the same author: "Möglichkeiten der Umorientierung des jugoslawischen Aussenhandels" *Weltwirtschaftliches Archiv*, Bd. 39 Heft. 3, May 1934 Kiel.

In 1934 Austria came next with 16 per cent., Germany with 15 and Czechoslovakia with 11. In 1936 exports to Italy dropped to 3.1 per cent. only, while exports to Germany rose to 23.7, to Austria to 14.6 and to Czechoslovakia to 12.3 per cent. (1).

This change in the direction of exports due to marketing conditions continues: in the first half of 1938 the share of Germany (including Austria) was 35.8 per cent., that of Czechoslovakia was 9.59 per cent. and that of Italy 7.18 per cent. of the total exports of Yugoslavia. It seems likely that Germany will retain the first place which she holds in the foreign trade of Yugoslavia; this must be emphasized as one of the most important changes which have occurred in the export of agricultural products in particular. The accompanying figures show the extent to which agricultural products predominate in exports to Germany.

The principal agricultural exports.

In addition to this trend movement in the exports of agricultural products from Yugoslavia, changes have occurred in the quantity and value and also in the destination of the various products exported. A short summary of these modifications will here be given.

Cereals. — All the export surpluses of the two principal cereals grown in Yugoslavia, wheat and maize, find markets in Central Europe. The wheat might be marketed entirely in the Mediterranean basin—which would be impossible for maize—but could be sold only at world market prices which, as already stated, are below production costs in Yugoslavia. There has been a perceptible change in the markets for Yugoslavian wheat in the course of the last ten years. While in 1928 out of 162,278 metric tons, 52,101 tons were sent to Austria, 61,686 to Czechoslovakia, 21,668 to Hungary and 22,016 to Romania, these States almost entirely disappeared from the list of buyers during the period up to 1937 (only Austria still bought 3,319 tons). In their place, in 1937, out of a total export of 318,035 metric tons, 156,796 tons were directed to Germany, 134,162 tons to France, 8,000 to Italy and 5,000 tons to the Netherlands.

The explanation of this contrast is that in the statistics compiled account is now taken of the fact that cereals sent to Hungary and to Romania do not remain in these countries but are immediately re-exported to the consuming regions of

(1) Among the Yugoslavian sources which have supplied the figures given, may be mentioned: (a) *Statistika spoljne trgovine kralj Jugoslavije* (Statistics of the external trade of the Kingdom of Yugoslavia). Years from 1926; (b) *Poljoprivedna godisnja statistika* (*Annual agricultural statistics* published by the Ministry of Agriculture from 1920; (c) *Statisticki godisnjak kralj Jugoslavije* (*Statistical Yearbook of the Kingdom of Yugoslavia*) from 1930; (d) *Spoljna trgovina* (*External Trade, Report of the Office for the encouragement of external trade*, only for years 1931 to 1933 inclusive.

Western Europe, Braila and Budapest being regarded merely as entrepôts. The large quantity purchased by France was temporary only. As normally France is in a position to cover fully her wheat requirements and at times even has surpluses, it was unlikely that this marketing outlet would be permanently available for Yugoslavia. This was fully confirmed in the following year. For Germany the situation is different, as, especially since the annexation of the Austrian and Sudeten regions which cannot meet their own food requirements, Germany will have to supplement her own production of wheat, seeing that within the limits of the production campaign and the Four Years' Plan there is neither the possibility nor the intention of completely covering requirements. In addition, there is no German wheat suitable for the manufacture of the finest flours (OOG), as the hard, brittle grain of Yugoslavian wheat, like that of Manitoba wheat, is the product of a special climate not found in Germany. On this account special attention is paid in Yugoslavia to the production of hard wheat, with high gluten content. In place of the former numerous indigenous varieties and of the Prolific variety which used often to be exported and which has starchy grains relatively poor in gluten, distribution is now made so far as possible of seeds of selected early ripening varieties (Bankut, Sekacs and Dakota wheats), of good storage quality, and resistant to parasitic diseases. By this means the quality of wheat for export has been noticeably improved.

Some account will be given later of the measures taken by the Government for the standardization and grading of wheats for export and of the plans for further development of these measures. Here it is enough to say that constant attention is paid to the development and safeguarding of markets for Yugoslavian wheat surpluses at fair prices, and that Yugoslavia is determined in all circumstances to keep the Western European market.

Almost the same may be said of maize, three varieties of which are exported: the late ripening horsetooth maize, the ordinary Yugoslavian round-grained maize and the early Italian varieties (Cinquantin, Pignoleto, etc.). Wheat has however become largely independent of prices on the world market, as a result of agreements between Yugoslavia and Germany—which largely protects its own production of wheat by means of market regulation and by duties and allows Yugoslavia a share in this protection. This has not been the case with maize, and in consequence there is a much wider range of markets for maize, for nearly all the European countries purchase Yugoslavian maize. Whereas formerly (in 1927) out of the total quantity of 197,689 metric tons with a value of 337,200,000 dinars, Czechoslovakia took 121,357 tons, Austria 39,352 tons and Hungary 24,279 tons, in 1937 out of a total quantity of 725,196 tons with a value of 698,900,000 dinars Austria imported 239,411 tons, Denmark 167,010, Germany 123,054, Italy 22,727, Greece 19,086, the Netherlands 46,905, Morocco 16,387 and the United Kingdom 11,532 tons. This expansion of exports was especially due to the fact that, in 1936-37, Yugoslavia had a record harvest and was in a position, owing to the shrinkage of the supplies from the overseas countries, to obtain good prices and to secure markets which before had been inaccessible.

Leguminous crops. — The export of beans from Yugoslavia is of considerable importance. In 1928 exports amounted to 9,772 metric tons with a value of 55,000,000 dinars, of which exports to Greece were worth 25.8 million dinars and those to Italy 21.1 million dinars. In 1937 exports were 44,491 metric tons of a value of 107.1 million dinars. The leading buyers of this increased export were again Greece (34.6 million dinars) and Italy (21.1 million dinars) but also the United States (8.6 million dinars), Germany (8.4 million dinars), France (6.4), Brazil (1.4), Argentina (3.5), also Nicaragua, Guatemala and other South American States with smaller quantities. It is undoubtedly due to the exceptional quality of the Yugoslavian — small grained — beans that the export of this product has acquired a still greater importance than formerly.

Fruit. — The export of fruit is an important item in the trade of Yugoslavia, but the value of this export varies between even wider limits than in the case of cereals. It is a matter of long experience that the harvests of the most important and widely distributed fruit crop in Yugoslavia, *viz.* plums, are found to be as follows in the course of every seven years: one superabundant, two plentiful, two good and two poor; if the poor harvests are due to night frosts, it often happens that the entire crop is lost and in those years the regions affected have no plums at all. Fluctuations consequently occur in the quantity and value of fruit exports: in 1928 a total of 67,187 metric tons of fruit were exported with a value of 250.8 million dinars, while in 1937 scarcely half the quantity was exported, or 35,537 metric tons with a value of 107.8 million dinars. As already indicated, plums form the greater part of fruit exports from Yugoslavia, and in 1928 out of the total fruit exports 47,788 metric tons consisted of plums to the value of 175 million dinars, while the export of apples was 11,220 tons with a value of 31.2 million dinars, that of walnuts, 3,188 metric tons with a value of 23.9 million dinars and that of bitter cherries, from which the famous maraschino liqueur is made, 585 metric tons with a value of 9.7 million dinars. In 1937 when, not in all, but in the most important plum-growing districts, a late frost occurred, which destroyed the greater proportion of plum and apple blossom, the export of plums fell to 21,862 metric tons with a value of 63.9 million dinars, of apples to 7,400 metric tons worth 16.4 million dinars, of walnuts to 2,413 metric tons worth 10.1 million dinars and of maraschino cherries to 400 tons for a value of 1.8 million dinars. The year 1937 was far from being the worst fruit year, but these figures show the great fluctuations in Yugoslavian fruit exports.

Exports of grapes are much more regular, the average of the last few years amounting to some 2,800 metric tons with a value of about 9 million dinars, at first mostly to Austria and Czechoslovakia, now mainly to Germany. For apples the change in destination of exports was the same as for grapes, whereas for dried plums Germany had been the principal market before. In the last few years Poland and Denmark also became purchasers, while Czechoslovakia has bought almost the same quantities every year. Walnuts were formerly sent mainly to Austria, although Germany, Hungary and the United States bought up to about 4 million dinars each. Exports to Hungary and to the United States

have now almost entirely ceased, and Germany and Austria remain the principal customers. The greater part of the maraschino cherries went to the United States in the dried state, the only condition in which transport is possible.

Industrial crops. — Tobacco and hemp are now the only industrial crops exported in any considerable quantities from Yugoslavia. Speaking generally, there is a steady increase in the growing of industrial crops in Yugoslavia; the area under cultivation was 118,519 ha. in 1926 and 168,231 ha. in 1937. This increase however is not reflected in exports, for their value has fallen from 432.6 million dinars in 1928 to 399.5 million in 1937. This is due to the fact that although, owing to Government measures, to be later examined, the production of oilseeds has definitely increased — 6,095 ha. were under cultivation in 1926 and 39,586 ha. in 1937 — the seeds obtained have been utilized in Yugoslavia itself for the manufacture of oils, instead of being exported. Only one kind of oilseed has been exported of late years, the soybean. Several thousand tons of these were exported during the last few months of 1938, almost exclusively to Germany, which is giving systematic encouragement to this cultivation in the Balkans with excellent results in Bulgaria, good in Romania but up to 1938 not very satisfactory in Yugoslavia. In 1938 a larger number of growers became interested in soybean growing. Their results were so satisfactory that the prospects of the extension of this valuable crop have decidedly improved. As Germany guarantees in advance the purchase price for a series of years and at a level ensuring a certain profit even for crops which are below the average anticipated, soya exports may be expected to increase in the future.

In the former Southern Serbia the *tobacco* crop is of special importance. From pre-war times the tobaccos of these districts, known as "Macedonia tobaccos", were as well known and appreciated as those of Herzegovina. As the sale of tobacco is a State monopoly in Yugoslavia, production and export are both under State control. In consequence the extent of the tobacco area depends always on the degree to which the Monopoly has been able to place the surplus production on the foreign market. According to the market situation, the area planted with tobacco has varied between the extremes of 21,264 ha. (in 1931) and 6,418 ha. (in 1934). On the other hand, the value of tobacco exports was 46,100,000 dinars in 1925 and 1,095,000 dinars in 1932. For the year 1937 the volume exported was 3,632 tons to a value of 109,100,000 dinars, of which much the greater proportion (to a value of 102,100,000 dinars) was bought by Czechoslovakia. It is stated that Germany has announced her readiness to purchase in future all tobacco in leaf which Yugoslavia has for export, and hence the prospects for the export of this crop are good.

This assured marketing outlet is the more welcome, as it is in the relatively over-populated districts, *i.e.*, in the Southern Karst region, that tobacco does best and is of value to the poverty stricken population as the product most sure of a market and bringing in the highest wages for the labour required, of which there is always a surplus available.

The export of *hemp* is of increasing importance to Yugoslavia. Originally the quality of Yugoslavian hemp was much inferior to that of Italian hemp. By

importing seed from Italy and by improving the retting equipment and the subsequent treatment of the hemp up to the semi-manufactured stage (stripped hemp, etc.) much has been done to enable Yugoslavian hemp to compete effectively on the market. In consequence the volume and value of hemp exports have considerably increased: whereas in 1928 not more than 8,523 metric tons were exported to a value of 49.9 million dinars, the quantity in 1937 rose to 20,312 tons for a value of 162.2 million dinars. In 1928 the leading buyers of nearly equal quantities in each case were Austria, Hungary and Germany. In 1937 a decided change had come about: Germany now stands at the head of the list of purchasers of hemp, to a value of 49.8 million dinars. The United Kingdom comes next, as a new and important customer, with 37.9 million dinars, then Austria with 25.3 million dinars, Czechoslovakia with 12,100,000 dinars and Hungary with 7.2 million dinars. It appears that England is anxious to attract hemp exports from Yugoslavia, a prospect offering advantages to exporters, as England pays in currency. The relatively low prices on the world market, however, give rise to difficulties in hemp-growing in Yugoslavia itself, and the crop is no longer so remunerative as it was formerly, when the net returns were considerably higher than those from cereals, and especially from wheat growing. Since, as a result of advantageous trade agreements, it has proved possible to maintain the price of wheat above cost of production, hemp-growing, which is liable to great variations in yield and in quality of crop, offers less advantage than formerly, especially as it requires much more labour than wheat, and this consideration is of great weight for the farms obliged to employ hired labour. In consequence, in spite of the prospects of improved marketing, Yugoslavian hemp export has not a completely assured future, and is likely to experience considerable fluctuations.

Livestock products. — The second group of Yugoslavian agricultural exports is that of livestock products. With these products also considerable changes have taken place during the last ten years, both in the volume and value of exports and also in countries of destination. It cannot be maintained that these changes are due to changes in the structure of Yugoslavian agriculture; they were actually the result of the crisis in the years 1930-34. Nevertheless, the quality of exports of products of animal origin, ranging from live animals to the products of the processing of meat, to milk, fats, eggs, feathers, etc., have been considerably improved since the founding of the new State. The results obtained in the improvement of breeds of horses, cattle and pigs have been especially noticeable, since efforts in this direction could be based on earlier successes. The great landowners in the northern regions of Yugoslavia had many exceptional breeds, some of which were renowned beyond the frontiers of the Austro-Hungarian monarchy. The Lipizzan horses, the red-brown spotted cattle (Simmental), the fat Mangalica pigs and the merino, Electoral and Rambouillet sheep were all represented here by well known pedigree stock. It is much to be regretted that when the agrarian reform was being carried out the best breeds were destroyed indiscriminately without regard to the future and that it has become necessary to build them up again on what was left of the former stock.

Comparing the development of Yugoslavian exports of animal with vegetal products, it is observed that the trends of volume and value in each case are nearly parallel although the fluctuations in the case of vegetal product exports are less marked, as stock farming cannot be immediately adjusted to the variations in crop returns. This adaptation is most readily made for pig breeding the extent of which depends in Yugoslavia on the supplies and the price of maize, which is the principal feed for fattening pigs. Sheep numbers are also reduced or raised by owners of flocks according to the production of hay and straw for winter feeding. Any change in cattle numbers is made less easy by the organization of the farm, the crop rotation and the requirements in manure, and a change is still more difficult in the case of farm horses. This fact explains the much wider variations in pig and sheep exports, as compared with those of cattle and horses, and accordingly the value of the exports of animal products remains at a more stable level than that of the exports of crop products. In any case, once the crisis of 1930-34 was over, there was a steady rise in value from 1933-34 and in volume from 1935-36. These latter years also mark the beginning of an improvement in the prices of animal and vegetal products on the home markets. After the price fall of 1931-32 and the very low price level on the world market in 1933-34, prices gradually recovered and rose above the level of prices on the world markets, rapidly in the case of crop products and somewhat more slowly for livestock products.

Horses exported from Yugoslavia may be classed in two groups: light draught horses (Lipizzan, Nonius, Anglo-Norman and English semi-light horses) and heavy horses of Noric or Belgian origin. The former are purchased by foreign countries mainly for army purposes, the latter mostly for slaughtering. Of the total exports of horses, amounting in 1928 to 38,184 head for a value of 8.94 million dinars, much the larger proportion was sent to Italy (28.8 million dinars) and to Greece (25.7 million dinars). In 1937 however out of the 25,913 horses exported to a value of 63.8 million dinars, the value of exports to Italy and Greece was only 5 million in each case. On the other hand, Austria imported to a value of 32 million dinars, Germany 4.7, Switzerland 5.6 and Hungary 2.4 million dinars. More than half the horses exported to Austria and to Hungary were intended for slaughter.

Exports of *cattle* were at one time (1928) mainly composed of oxen (59,758 head), the number of bulls (17,176) and cows (17,687) and heifers and bullocks (17,389), with a total value of 289.8 million dinars, being smaller. The largest proportion, to a value of 126 million dinars, went to Italy, while Austria came next with 108 million dinars. Greece imported cattle to a value of 44.6 million dinars and, what is especially remarkable, Malta to a value of 7.2 million. In 1937 the composition of the cattle exports remained nearly the same, but the total number fell to 80,481 head and the value to 169.8 million dinars. Among the importing countries Italy, in spite of sanctions, again heads the list (90.2 million dinars); next come Germany and Switzerland with 13 million each, Austria with 11.5, Greece with 7.5 and finally Malta with 9.3 million dinars. Stress is again laid on this latter country because it is no longer the only country in the Mediterranean basin to have increased its imports

of Yugoslavian cattle. Besides Malta, Libya has imported to a value of 1.5 million dinars, Egypt 2.1 and Palestine 14.8, in all a value of 28.4 million dinars. It has already been noted that Yugoslavia shows a tendency to re-direct her foreign trade from the West towards the East. The instance just given illustrates clearly enough how far this tendency might be pushed if pursued systematically.

Greece is still the only country purchasing *sheep*, in spite of many efforts to capture the French market; the value of Yugoslavian sheep imported into Greece during the year 1937 amounted to 35.7 as compared with 116.6 million dinars in 1928.

As in the past, Austria still provides the principal market for *pigs*. Her imports from Yugoslavia for 1928 of 207 million dinars were almost the same as the imports of 210.8 million in 1937. Next in order comes Czechoslovakia, whose imports for the years 1928 and 1937 were valued at respectively 100.4 million and 142.8 million dinars. Italian imports of live pigs from Yugoslavia rose during the this period from 9.5 to 28.5 million dinars and those of Germany from 0.7 to 40.6 million dinars. In addition to the importation of pigs, Austria and Italy imported from Yugoslavia in 1928 pigmeat to the value of 46.9 million and 16.5 million dinars respectively, but in 1937 Austria's imports had fallen in value to 21.3 million dinars while Italy scarcely figured among the purchasers. Germany, on the other hand, imported pigmeat to the value of 59.7 million dinars. There should be an appreciable increase in this figure owing to the latest negotiations (October-November 1938) with Germany and Italy, but this will probably take the form of chilled—not frozen—pork which, thus preserved, is easily transportable to the great centres within reasonable distance, where it is consumed. As the temperature of chilled meat is between 2° and 4° C it is not frozen and may be regarded in all respects as fresh meat. Modern methods of refrigeration make it possible to transport meat at that temperature from Yugoslavia to Germany, as far as the Main and the Danube, and to Italy, as far as Milan, without undue transport charges. It can also be transported to Berlin, Frankfort-on-Main, Paris and Turin at a cost which certainly enables competition with overseas frozen meat. It is therefore reasonable to anticipate that in the future this method of transporting and utilizing Yugoslavian meat will play an important part in the export trade not only in meat but also in poultry, game, eggs, fruit and similar products (1).

Eggs and *poultry* are extremely important items in Yugoslavian exports since they represent the chief source of income for small peasant farmers: in some cases they are the only link with the market and the only means of obtaining ready money for working expenses. It may be confidently asserted that the price of eggs on the world market is as important for about half the Yugoslavian peasant farmers as the price of wheat and maize is for the other half.

(1) As regards the position and prospects of the trade in meat seen the monograph "The International Trade in Meat" published by the *International Institute of Agriculture*, Rome, 1936.

This is readily understandable, as these small farmers are obliged to supplement their own production by purchases and need ready money to buy the food-stuffs which their farms do not supply. The stagnation on the poultry and eggs market, which was partly due to the general crisis and partly to the constantly varying clearing arrangements, had disastrous results for the poor and very poor small farmers: the price of eggs over this period fell from one dinar (the normal price per egg) to a fifth of that sum and then lower still. These farmers have not yet fully recovered, although in 1938 egg prices dropped below a dinar only during the summer, which is the season of largest production of eggs.

Certain changes have occurred in the course of these years in the destination of poultry and egg exports from Yugoslavia: in 1928 a total of 8,469 metric tons with a value of 131.8 million dinars and in 1937 a total of 14,130 metric tons with a value of 170.8 million dinars were exported to the following countries:

	Austria		Germany		Italy		Switzerland		England	
	Tons	Million dinars	Tons	Million dinars	Tons	Million dinars	Tons	Million dinars	Tons	Million dinars
1928	3,377	51.1	1,334	19.9	2,233	35.4	862	14.2	316	4.8
1937	1,908	21.7	4,739	55.1	3,856	50.0	1,378	19.7	2,351	29.4

The positions of Austria and Germany have been reversed; whereas formerly Austria was by far the largest buyer of poultry and especially of young poultry, it is now Germany which imports fowls and young poultry in nearly equal quantities. It may be assumed that the ratio between the two kinds of poultry, killed or alive, will remain the same after the union of the two countries. It is of interest to observe that England now buys very large numbers of turkeys; out of 2,351 tons with a value of 29.4 million dinars as shown in the poultry statistics, 2,179 tons with a value of 27 million dinars consisted of turkeys (1937), while in 1928 their value was only 4.8 million dinars. There is a very marked increase in sales to Italy, in spite of the difficulties caused by the veterinary control and in spite of sanctions. There is also an increase for Switzerland.

In 1928 exports of eggs were 24,524 tons with a value of 467.9 million dinars. Unfortunately exports were not maintained at this high level. In 1937 they fell to 12,264 tons, or one half of their former volume and to a value of 117.9 million dinars, or one fourth of their former value. Thus there has not only been a reduction in quantity but also a price fall of some 50 per cent., which is much to be regretted in the interests of the Yugoslavian small farmers who have a hard struggle for their livelihood as it is. This price fall is mainly due to the German regulation of the market in respect of grading of

eggs by size and weight, as only in certain districts do Yugoslavian poultry-breeders keep birds for breeding purposes, the eggs of which meet German requirement. The very large majority of eggs weigh less than from 55 to 60 grammes and are not suitable for export. Attempts have been made to remedy this by removing the contents of eggs that are too small from the shells and exporting them in jars. In this way 664 tons were already exported in 1937 with a value of 7.1 million tons and during the first six months of 1938 there was an export of 1,862 tons with a value of 22.2 million dinars. It may be expected that the technical improvements which are being introduced into this method of handling eggs will make it possible to export much larger quantities (1). In addition to Germany, which in 1937 imported eggs in the shell to the value of 43.4 million dinars and eggs in jars 7.1 millions, England imported to a value of 12.9 million and Switzerland 28.5 million dinars.

During the first six months of 1938 there was considerable expansion of imports of Yugoslavian eggs into England, eggs in shell being imported over that short time to the value of 18.5 million dinars and eggs in jars to 9.9 million. In view of the keen interest shown by England in the expansion of trade relations with the countries of Southern Europe, a further increase in this export to England may be anticipated, particularly as eggs are one of the few farm products able to meet competition at world prices.

Among other livestock products pig fat, of which only very small quantities (40 tons) were exported in 1928, has become an important export item. In 1937 exports totalled 8,333 tons with a value of 122.5 million dinars, mainly to German (74.1 million) and to Czechoslovakia (24.4 million), but also to England (14.9 million dinars). A considerable increase in the export of bacon has also occurred. The quality of this article of diet, which is very rich in calories, is excellent in Yugoslavia and is increasingly in demand abroad. Many efforts have been made to obtain a market in England for exports of bacon, but so far without success, and the same is true as regards export of hams, sausages and other preserved meats in any large quantities, although the required quality undoubtedly is to be found in Yugoslavia since there are plenty of fat and lean pigs. The total value of exports of these products in 1937 was 41 millions dinars as compared with 14.2 million in 1928. In view of existing possibilities this amount must be considered too low; the encouragement of the *meat industry* remains an urgent necessity.

Among articles of export of *agricultural industries* may be enumerated wheat flour, bran and fodder meal, cheese (Kackalj), olive oil and wine. Considerations of space however make a detailed treatment impracticable.

Among other agricultural products, exports of hides and skins of cattle, calves, sheep and goats are on the increase, both in volume and in value. In 1928 exports amounted to 4,207 tons valued at 107.2 million dinars, while in 1937 exports were 4,425 tons with a value of 137.6 million dinars. Generally speaking, exports of cattle hides are rapidly declining (in 1937 the value was only 3.8 million dinars) while those of skins of calves, sheep, lambs and goats are steadily increasing. The principal buyers are Czechoslovakia (for the large glove industry), the United States, the Netherlands, Hungary, Germany and Italy.

* * *

During the first nine months of 1938 there was no noticeable change in the proportions of Yugoslavian exports, nor in the countries of destination, but a considerable decrease in volume and value may be observed. The value of the exports of agricultural products in millions of dinars during the months from January to September (inclusive) were as follows:

	Jan.-Sept. 1938	Jan.-Sept. 1937
	million dinars	
Wheat	110.0	515.0
Cattle	56.0	126.3
Pigs	245.7	292.7
Hides and skins	76.6	115.4
Hemp	105.4	142.4

The reasons for this decline, in spite of production remaining at the same level, will be examined in the following pages.

II. — Causes of changes in Yugoslavian agricultural exports.

The agrarian reform and post-war period.

In the foregoing statement the year 1928 has throughout been compared with the following years, the reason being that 1928 marks the beginning of the decade which displayed certain definite trends and for which relatively trustworthy statistics on exports are available.

Since its foundation on December 1, 1918, the Kingdom of the Serbs, Croats and Slovenes had, like all the victor States, to pass through all the post-war phases. Conditions differed only in this respect, *viz.*, that Serbia was completely devastated, stripped of all means of production, its few industries ruined, railways and roads destroyed and livestock, seeds and all farm equipment disappeared. The former territories of the Austro-Hungarian monarchy which were grouped to form the joint Kingdom had suffered less or even not at all from the effects of war, but their export surpluses which before had gone to the monarchy were now directed to Serbia and in consequence there was a complete change in the former trade channels of these agricultural products.

In the following years, during which Serbia recovered with the surprising rapidity with which other agricultural countries (1) also recovered, all the

(1) For Bulgaria see: DANAILOW G. T. *Les effets de la guerre en Bulgarie*. Published by the Dotation Carnegie Paris.

agricultural products which the new Kingdom could in any way dispense with began to be exported increasingly to many countries of Western Europe. Germany at that time took only a very small proportion of these exports. Exporting became so remunerative and the risk of pushing exports too far become so pressing that the Government introduced export duties: for example, in 1925 the duty on wheat for export was 15.60 dinars per 100 kg., on cattle 180 dinars per head, on pigs 360 dinars up to 70 kg. of live weight and 192 dinars for a higher weight, on cattle hides 960 dinars per 100 kg., on wool 760 dinars per 100 kg. These duties were shortly afterwards abolished as they impeded any export (1). The inflation which soon followed and the subsequent deflation had a very diverse influence on foreign trade of Yugoslavia in general and on that in agricultural products in particular.

The fluctuations in the monetary unit, *i.e.*, the paper dinar which was not covered by gold, scarcely permit of comparison between the volume of exports of these years with that of the following years, and in respect of value excludes comparison altogether. It is only since 1925, the year in which the stabilisation of the dinar on a gold basis was seriously attempted, being later established by law in 1931, that the figures relating to the value of Yugoslavian imports and exports can be freely compared.

Besides these changes in monetary policy, profound changes have occurred in the structure of agriculture within Yugoslavia.

On February 25 1919, the Regent (afterwards King Alexander I) issued a decree-law containing temporary measures for *agrarian reform*. These measures remained in force for ten years and were not definitely superseded until the years 1931-34. In his plan for agrarian reform the Regent was prompted by a spirit of humanity and political wisdom but, unfortunately, when it was carried out, the large estates were not used to benefit the ordinary family farmer – the real backbone of every nation – but were divided into innumerable dwarf holdings. So limited was the area of these holdings that even the largest were inadequate to support a family; obviously, therefore, they could not fulfil the functions of the average family farm, still less of the former large estates. Hence there was an appreciable fall in the export of agricultural products, which had previously been obtained from the large estates and were of excellent quality. The actual figures are given in the following table:

Exports of Cattle and Pigs.

(1921-1925)

	Number	
	Cattle	Pigs
1921	133,535	476,293
1922	128,362	301,268
1923	235,979	293,497
1924	186,903	219,335
1925	131,456	201,282

(1) See DRAXLER, B. *Die Landwirtschaftskrise im östlichen Donaauraum*. Petrovgrad (Yugoslavia), 1936.

Exports increased when the large estates were being broken up and their livestock had to be disposed of. There was subsequently a rapid fall both in quantity and quality; indeed, as regards the latter, the former high standard has never been regained.

Exports of agricultural products were similarly affected by the agrarian reform. Although there was an appreciable increase during the years 1925-26 owing to exceptionally good harvests, during the following years the value of exports declined steadily although the harvest yields over the period were nearly uniform. This fall in value was due to the fact that the selected and standardized products of the large estates were superseded on the market by ordinary peasant production which could not successfully compete with foreign cereals in Central Europe (1).

The world crisis and government intervention.

The general fall in cereal prices on the world market, which began in 1929 and was the starting-point of the world economic crisis, added to the difficulties brought about by agrarian reform in the disposal of agricultural products. So serious were these difficulties, especially in regard to wheat, that they finally became intolerable for the peasantry, which represents the greater part of the Yugoslavian population. Prices fell from about 400 to 70-80 dinars per quintal. Moreover the proportion of his produce required from the family farmer for taxes amounted to four or five times that of pre-reform days. The price-relationship between agricultural and industrial products changed to such an extent that the latter were beyond the means of the peasantry. The purchasing power of whole masses of the population fell almost to zero and a situation arose which was intolerable both economically and politically. In view of this state of affairs the Government embarked upon a course of action calculated to have a decisive effect on the further evolution of agriculture in Yugoslavia, as also on the export of agricultural products. It intervened officially in the formation of prices, first of *wheat* and later of other agricultural products, thus introducing a new element into the system of unregulated supply and demand which had existed till then (2). It was also necessary to take action for the suppression of usury, which always gains ground in the country in times of crisis, and of intermediary trading, which lowers the price to the detriment of producers. In the hope of achieving all these objects the Government introduced the law of July 10, 1931, on the *internal wheat trade*, and that of June 27, 1931, on the *monopoly of wheat exports*.

(1) For details as to agrarian reform in Yugoslavia see the article by the present writer: "Agrarian Reform in Yugoslavia" in the *Monthly Bulletin of Agricultural Economics and Sociology*, XXth Year, 1934, Nos. 1-3 International Institute of Agriculture, Rome; also „*Die sozial-ökonomische Struktur der jugoslawischen Landwirtschaft* " Berlin, 1937.

(2) For further details as to the regulation of wheat-prices in Yugoslavia see V. PRYOT's study: „*Die Weizenregulierung in Jugoslawien* ". *Weltwirtschaftliches Archiv*. 45 Bd., Heft 3, Kiel, 1937.

These enactments were preceded by the formation of a Central Board for the Export of agricultural products (in the first place only wheat); this Board was set up under the name of "Prizad" as a privileged joint-stock company, the State holding 81 per cent. of the shares, and with an initial capital of 15,000,00 dinars (Law of April 15 1930). The function of the "Prizad" was at first to effect price regulation on the home market by purchase of wheat and wheat sales abroad, and to cut out as far as possible the large foreign firms which had up to then been exercising a semi-monopoly of export business. The small initial capital and faulty management resulted at first in complete failure of the new institution; when however the Government was obliged to have recourse to the enactments (of 1931) mentioned already, the "Prizad" was entrusted with the carrying out of the necessary measures, and from that time on its importance for agriculture and the export of agricultural products from Yugoslavia steadily increased. Actually, these enactments proved, as regarded internal trade, to be not merely useless but directly prejudicial; they expired, however, on July 1 1932 as they had become superfluous. It was in fact quite clear that a direct control of the price of wheat to be consumed *within the country* was unnecessary so long as precautions were taken that enough cereals remained in the country for the food of the population and for sowing, together with a certain reserve, while all surpluses likely to lower prices were withheld and disposed of. In this way the internal price is automatically brought to the level of the export price, provided the pressure of surpluses is removed. To ensure this removal is now the business of the "Prizad". The management of the "Prizad" has been thoroughly reorganized and since then it has not only undertaken this difficult task with efficiency but in the last three years has achieved practical results.

According to the trade returns for 1937 the "Prizad" bought in that year 102,700 metric tons of wheat with a total value of 184.7 million dinars; in 1938 up to end of December 184,350 metric tons were purchased at the price of from 150 to 170 dinars, as compared with which the world market prices in Liverpool and Rotterdam for spot wheat varied around 65 dinars per 100 kg. In 1937 the "Prizad" also exported—for the first time since the complete breakdown of exports in 1925—142,000 tons of flour, and also 26,000 metric tons of bran. In addition the "Prizad" purchased for export some 208,000 metric tons of maize, 1130 of fruit (fresh and dried plums), 1150 of beans, 9450 of oilseeds and 47,880 loads of opium. Marketing of all oilseeds is regulated by the "Prizad" and it is anticipated that several other crop products will also come under its control. Since the establishment of the "Prizad" it has been possible to maintain wheat prices above those of the world market. In consequence, as already noted, the internal price was maintained as high as the level of the export price, and indeed even rose so far above it that the "Prizad" from November 11 1937 up to the time of the new harvest in 1938 bought no wheat at all, as the price had risen to 240 dinars per quintal, while the world market price remained much lower.

The higher prices could be paid by the "Prizad" because the wheat was marketed in States (Germany, Italy, Austria, Czechoslovakia) which had

enacted marketing regulations and also maintained their internal wheat price above world market parity. The preferences in respect of clearings and quotas, established by agreement in the trade with these countries, enabled the "Prizad" to acquire in the past trading year 76.9 million dinars, which sum was assigned to the fund for the further encouragement of exportation.

In the meantime there has been a considerable increase in the funds of the "Prizad": a credit of 300 million dinars has been guaranteed by the Government, including 250 million for cereal transactions, 30 million for opium and 20 million for oilseeds. The purchases have been to an increasing extent effected through co-operative organisations, namely up to 7 per cent. of all purchases in 1934 and 23 per cent. in 1937. The grain trade is however the principal buyer for the cereals to be exported through the "Prizad", as only the trade is in a position to grade, by cleaning and sorting, the cereals consigned by growers, and thus obtain an exportable product.

The lack of warehouse accommodation has so far prevented the "Prizad" from tightening up the purchasing organization and from giving more effective assistance to the co-operative organisations. By an Order with the force of law of June 14 1938 a special joint-stock company has been set up in Belgrade under the name of "Silos A. G." with an initial capital of 220 million dinars which may be raised by means of credits to 800 million dinars. This company is to establish elevators throughout Yugoslavia for the storage and proper marketing of cereals, and when required also of fruit, eggs, opium, cheese, etc., according to local requirements. In the first place large elevators with a capacity of from 1000 to 1500 truckloads are to be erected in the districts producing the best wheats for export, as also in those areas where the production of breadstuff cereals is insufficient for local needs and requires to be supplemented. Besides these, intended primarily for stocks, as large a number as possible of smaller joint co-operative storehouses with less than 500 truckloads capacity are to be established with the help of subsidies and other forms of encouragement. Finally the "Silos A. G." is also to construct refrigerating plants for perishable goods such as fruit, vegetables, eggs, etc., and to undertake the proper marketing and transport of these. Bills are issued on warehoused commodities which can be discounted by the State banking institutions up to 75 per cent. of their value.

Provision has been made for close collaboration between the "Prizad" and the "Silos A. G.", so that the two organisations will support each other as far as possible. It should thereby become possible for Yugoslavian agricultural products intended for export to be marketed in future at the best prices obtainable and with the utmost rapidity, to be purchased from the growers in large quantities of uniform quality, and finally to be suitably standardized and graded for export.

The effect of the work of the "Prizad" on wheat prices is best shown by the fact that, as already indicated, the price of wheat before that organization began operations had fallen below 100 dinars per quintal, while before the 1938 harvest it had risen to 220 dinars. It is true that this rise has certain social disadvantages, as the consumers of wheaten bread, the town population,

industrial workers, and a small proportion of the farming population who supplement the more generally used maize meal by purchases of wheat flour, have to meet this increase in the cost of living without any chance of recouping themselves in other ways.

The cost of living index rose from 60 in 1934, when it was on a gold basis, to 78 at the end of July 1938 (the increase reckoned in dinars is from 860 to 1109 dinars) (1); that of foodstuffs (1926 = 100) from 63 to 84 (2). On the other hand the national income derived from agriculture rose from 19 milliards of dinars in 1934 to 22 milliards in 1937; in other words, the purchasing power of the farmers was increased by that amount and accordingly the whole national economy reaped the benefit. The value of the wheat crop rose over the same period from 1273 to 1862 dinars per ha. Since 81 per cent. of the inhabitants of Yugoslavia belong to the farming classes, the rise in wheat prices cannot in itself be regarded as unfortunate, although it may involve consequences undesirable from other standpoints.

Development of a new trend of agricultural production.

The necessity of a change in the general direction of Yugoslavian agricultural production thus becomes evident. Such a change is undoubtedly inevitable for various reasons which for considerations of space cannot here be detailed. One only may be mentioned, the need for counteracting the unfavourable consequences of overpopulation in the rural districts by employing more labour in the processes of production. Instead of production a surplus of wheat and maize, the object should be to grow crops which require more intensive and better paid labour than do these two cereals. At the present time wheat and maize crops cover an area much larger than that under all the other crops. The country is thus still under the régime of a primitive cereal cultivation and there is no opportunity of introducing a scientific and intensive rotation. A more intensive farming would include the cultivation of oilseeds, tobacco, sugar-beet, fibre crops and other industrial crops. As however the increase in the prices of wheat and maize have had the effect of reinforcing and encouraging the conservation of the Yugoslavian farming class, all the measures taken by the Government for an intensification of agriculture are hampered and rendered difficult of application (3). The Government is fully aware of the position and anxious to render the export of agricultural products less dependent on wheat and maize, and has accordingly issued a series of orders fixing minimum prices for such crops as it is thought advisable to grow with this purpose in view, especially oilseeds (colza, rape, ca-

(1) BENKO-GRADO, Dr. A. Baron: Index. July 1938. Zagreb.

(2) Narodna pricreda. Nationalbank. No 3. 1938. Belgrade.

(3) This objective was embodied in the law of September 6 1929 on the improvement of agriculture, drafted by the author as Minister of Agriculture and carried into effect by him. See the previously mentioned work of V. PERTOT, p. 630.

stor, sunflower and — for German requirements — soybean) as well as cotton and rice. As these products are not — with the exception of soya — intended for export, they will not be discussed there, although it may be remarked that the increase in their production may in the near future affect the composition of Yugoslavia's agricultural exports, and in the case of cotton and rice, imports.

Future prospects for Yugoslavian agricultural exports.

Work similar to that of the "Prizad", particularly in regard to exports, is also carried on in the export of livestock and livestock products by a department of the Institute for the Promotion of Yugoslavian Foreign Trade in Belgrade. The powers of this Institute, it is true, are not so far-reaching as those of the "Prizad", as it can transact no business on its own account and has no working capital, but the whole of the trade with countries with which Yugoslavia has concluded clearing and quota agreements is in its hands, and it thereby systematically exercises control over the export market, which already works with remarkable smoothness, especially in regard to animal products. It is due to the work of this Institute that new markets for Yugoslavian exports have been found and maintained in the Mediterranean basin. It may also take the credit for the fact that these products have become known in Northern Europe, England, the Netherlands and Belgium, and that their producers are endeavouring to give permanence to these trade relations.

In the two institutions, the "Prizad" and the Institute for Promotion of Foreign Trade, Yugoslavia has set up central offices for the organization of its foreign trade, which in some degree are opposed to the liberal conception of trade. Till quite recently a completely free trade policy was followed in Yugoslavia; in all trade agreements the most favoured nation clauses were respected even when their application was prejudicial to the interests of the country. The discriminations made by nearly all States against the most favoured nation clauses finally forced Yugoslavia also to apply discriminations against States which make use of these clauses for their own benefit without giving any advantages in exchange. Hence Yugoslavia was finally reduced to a system of one-sided protectionism, export quotas, payments by means of clearings, barter of commodities, etc., in short, to the adoption of all those methods which are the features of a modern planned economy.

The experience of Yugoslavia has been that by means of this process the national income has increased, the real income of *all* productive classes has been raised and the economic capacity definitely strengthened. It is to be assumed that Yugoslavia will continue with the economic policy which is now being pursued.

Yugoslavia is now on the way to a comprehensive industrialization. Efforts are being made to increase the volume and value of the exports of raw materials and semi-manufactured goods, that is to say, of goods which entail more labour in their production than agricultural products; the object is also to extend the means of production and branches of production beyond the limits of agriculture pure and

simple. This policy is being effected for a number of political and economic reasons which make industrialization, within the practicable limits of the home production of raw materials and with due regard to the protection of the land, appear *desirable*. It is however not merely desirable but also *essential* that Yugoslavia should build up industry to the greatest possible extent, so as to provide employment for such surplus population as can no longer produce sufficient supplies of foodstuffs, and to divert labour to manufactures. For reasons of space statistics in regard to the overpopulation in rural areas of Yugoslavia cannot here be quoted and in this connection reference must be made to publications already available (1). For the purposes of the present enquiries it is enough that this necessity should be clearly recognized, as well as the fact that industrialization is in practice the shortest and most effective method of eliminating, so far as possible, the disastrous results of overpopulation (malnutrition, high mortality, intellectual stagnation, lowered purchasing capacity, decreased taxation yield, etc.). As there has been an increase in the number of workers in industry from some 225,000 in 1929 to about 700,000 in 1937, it is at once evident that these former self-suppliers, once detached from the land, are now becoming consumers of all kinds of agricultural products and that this consumption must primarily be at the expense of the former export surpluses. These latter must therefore diminish in direct proportion to the increase in the numbers of industrial workers in Yugoslavia. The reduction in exports of agricultural products will be seen especially in the most important foodstuffs: bread cereals, meat, beans, fruit, etc. These will tend to dwindle as the production of commercial crops (hemp, oilseeds, tobacco), early vegetables, fruit, etc. increases over and above home requirements. The labour forces now lying idle on the land would be better employed in such types of cultivation and at the same time the drift to industry would be less marked. As a final result however a decline in the export of agricultural products is to be anticipated as the consequence of increased consumption within the country. As these products mainly go to countries which have quota and clearing agreements with Yugoslavia, the importance of these countries will probably become less for Yugoslavia, unless they increase their purchases of the commercial crops enumerated above. In any case it is to the interest of Yugoslavia to export increasingly by preference such agricultural products as can meet the competition of the world market, and for which exporters can obtain currency payments without restrictions: chilled meat, eggs, poultry, fruit, hemp, dairy products, etc. Such a reorientation requires much time and persistence, involving the transition of Yugoslavian agriculture from the cereal economy now prevailing to a more intensive crop rotation combined with an increase in the cultivation of fodder crops and in stall feeding. It also demands a higher level of education and the development of co-operation, etc., all of which need for their realization time and patience.

(1) By the writer of the article: Problem relativne prenapučenosti u Jugoslaviji (The Problem of the relative overpopulation in Yugoslavia). Archives of the Ministry of Agriculture. Belgrade 1938. Also the writings of the author given in the footnote on p. 1.

There remains one other course to pursue: a change in the direction of exports from the West to the Near East and South, to the Mediterranean basin. Mention has already been made of this change and it is unnecessary to say more as to the prospects except that they depend on the extent to which Yugoslavia can place on these markets *all* its agricultural products — including pigs and maize — with very low costs of transport and time of transit. It remains to be seen whether Yugoslavia will resolve to take advantage of this opportunity. In any case such a change in direction of exports again requires much time and persistence and the overcoming of immense difficulties for the conquest of a market previously in the hands of powerful rivals. But just as the little Serbia in 1906, after Austria-Hungary suddenly denounced the trade agreement in existence till then, immediately found new markets for nearly all the products previously sent to Austria-Hungary, so now a change in the direction of Yugoslavian exports can be organized and realized within a new economic or political framework.

Dr. O. v. FRANGEŠ.

AGRARIAN REFORM AND THE RECENT EVOLUTION OF LATVIAN AGRICULTURE (1)

SUMMARY: Agrarian Reform. — The work of the State Land Bank. — Construction of rural buildings. — Labour and methods of farming. — Progress in agriculture and stockraising. — The Chamber of Agriculture. — Insurance. — Price-control.

Agrarian reform.

The ravages of the Great War and the repercussions of the Russian Revolution compelled the authorities to carry out an agrarian reform, giving land to the peasants who were without it. Further, the feudal type of agriculture, which had been firmly established in the country for several centuries, embittered the relations between the different social classes of the nation. This is comprehensible when it is realised that 800 families of the nobility owned 48.1 per cent. of the land, and that there were families owning as much as 30,000 hectares.

In Latvia, therefore, the chief aim of agrarian reform has been to provide land to those who lacked it, and so to create a new class of landowners.

The Land Office was created for this purpose; it dealt with the land belonging to the State, land bought in accordance with the agrarian law, and finally, land belonging to the Church and the communes. The original landowners are permitted by the law to retain from 50 to 100 hectares as well as industrial

(1) Report contributed by the Latvian Ministry of Agriculture.

enterprises established on their property; under the same law, the churches were allowed to retain possession of 50 hectares of land, and the municipalities the area essential to their needs. Legal servitudes which encumbered the land pooled in this way were abolished.

Land was distributed by the Office to small landowners who wished to increase their farms to the average area of the new farms which had been created in various parts of the country.

The maximum area of these farms was fixed at 27 hectares, but the area was varied according to the distance from industrial centres, or according to other economic circumstances.

In allotting the farms, preference was given to those who had taken part in the struggle for the liberation of Latvia. To put the newly formed farms on a sound basis, the allotments of the Land Office were calculated at a low price: for land yielding an average return, 10 lats per hectare; for land yielding a larger return, 20 lats per hectare. Those affected by this legislation were given full ownership of the land. They could therefore hand on the holding by inheritance, and could sell or lease it in accordance with the regulations of the civil code.

The agrarian law prohibited the same landowner from possessing more than 50 hectares of land. It also forbade the formation of farms of less than 10 hectares; no exception was allowed without the authorization of the Minister of Agriculture. Individuals owning several farms had to sell them within a period of three years, since legally they were only entitled to hold one.

Approximately 3,400,000 hectares of land had been assigned to the Land Office by 1 January, 1938. From 1,700,000 hectares of this area 54,154 farms, called "new properties", 1,502 gardens, 10,857 allotments for artisans and 3,007 fishermen's holdings have been created; 9,857 farms which had formerly belonged to seigneurial houses were given to farmers, who had rented them for a long period; 6,536 parcels of land were allotted to cultural organizations, 1,585 to industrial enterprises in the country, 7,347 have been incorporated in the Office for liquidating servitudes, 50,595 pieces of land have gone to increase the small farms and 11,274 areas have been reserved for other purposes. In addition, the original landowners have retained 1,306 farms and 492 industrial enterprises; 37,456 units have gone to increasing the lands of urban and rural communes.

Now that agrarian reform has been accomplished, Latvia has become a country of small farms, numbering some 276,000.

Farms whose area is less than 10 hectares (small workmen's allotments for example) amount to 44.5 per cent. of the total number of farms; those from 10 to 30 hectares, 41 per cent., from 30 to 100 hectares 14 per cent., over a hundred hectares, 0.5 per cent.

The other great task of agrarian reform, parallel to the breaking-up of large properties, has been the consolidation of holdings. Before the agrarian reform a peasant's land was composed of a large number of strips, which made cultivation difficult. Since consolidation, each farm is a continuous unit. The official surveyors have consolidated the land of 72,000 holdings in the eastern part of the country where strip cultivation was especially restrictive.

The work of the State Land Bank.

The State Land Bank was founded in 1922 to adapt mortgage credit to the needs of the newly created farms. It commenced operations at once; in the field of agrarian reform its task has been to fix the total amount of loans for the newly created farms and the conditions for their repayment. It has also had to decide on the total amount of advances to be granted to the small proprietors owning land sold by this bank. Long-term credits were indispensable to the newly created farms because buildings had to be constructed, the soil improved, livestock hired, etc.

Besides these operations, the State Land Bank had to make long-term loans to the farmers. Agrarian reform was not confined merely to the new farms formed from the territory of the State Land Office. A more difficult task was that of modifying the distribution of land in the villages, where, following the earlier Russian system, the land belonged to the peasants by right of common ownership and was allotted to them temporarily in long strips. The holders' scattered strips had to be consolidated and re-formed into single independent farms.

The mortgage debts on the farms formed from the land of the Office represent the value of the land and buildings, in some cases the values of the forests, and finally the expenses arising from surveying. The new owners rarely pay off the amounts due in cash; more often they avail themselves of the Land Bank's credit. The mortgage debts on 83,000 farms formed from the lands of the Office have been centralised at this bank as well as the mortgage debts on 43,000 farms formed from communal land and now standing separate. The debts to the State on these farms consist of the amounts owing for the land allotted by the Land Office to increase small holdings, and the expenses arising from surveying; the latter work has been performed at the expense of the government in the majority of cases so that the newly created farms have not had to pay much. The total amount of mortgage loan is 80 million lats.

The State Land Bank has granted loans for equipping 95,000 holdings formed from the land of the Office and 45,000 farms made up from communal land. The total of these loans is 95 million lats. The Bank has also advanced 9 million lats for other types of equipment.

The amortisation period for all amounts owed to the State is fixed at 41 years. Until 1927, the rate of interest was 4 per cent, but from this date it has been 2 per cent.

To assist certain farms to pay off their long term loans the Land Bank has recently granted 11.5 million lats to 15,000 landowners; one part of this sum, 8.5 millions, has been lent at a rate of per 4 cent. and must be repaid within 28 years; the other part, 3 millions, is lent at a rate of interest of 3 per cent. and is repayable within a period of 28 $\frac{1}{2}$ years.

Altogether, the State Land Bank has advanced 195.5 million lats to farms set up as a result of the agrarian law. The total amount of loans has been reduced to 135 million lats as a result of repayments and special annual pay-

ments, as well as of subsidies granted by the State. Farms formed from the land of the Pool are mortgaged on an average at 1,400 lats; i. e. at 87 lats per hectare.

Construction of rural buildings.

The problem of constructing farm buildings at first only affected those farms which had been newly created, those which had been ruined during the war, and finally, old holdings whose area had not exceeded 27 hectares. Farmers were able to obtain material from the State forests at a cost of a fifth of their real value for the construction of essential buildings. At the same time they were granted long-term loans by the Land Bank. To ensure that the new buildings should be comfortable and of good appearance, the Ministry of Agriculture worked out model schemes which were put at the disposal of those concerned. To encourage the use of non-inflammable building materials, a Government decree of September 9, 1926 granted landowners the cancellation of part of their debt; in this way the resources of timber have been spared. By the law of December 30, 1930, landholders could obtain non-inflammable building materials (of cement) free instead of wood.

On January 1, certain changes in the law relating to farm building came into force. By the new regulations the Ministry of Agriculture supplies non-inflammable building materials at a reduction of up to 50 per cent. of the normal price. Wood necessary for these buildings is sold at a reduction of 80 per cent. Those wishing to erect buildings in wood must buy the wood at the normal price, except for the quantity needed for non-inflammable buildings. Wood can only be obtained at half-price for barns. The non-inflammable materials supplied by the Ministry are bricks and slates. The Ministry repays farmers half the cost of transporting bricks by rail if the distance is over 50 km. The Ministry supplies sheets of insulating turf to protect the walls from cold. By the same law, the State Land Bank allows necessary loans for the construction of buildings. Those wishing to profit from these facilities have to build in conformity with model schemes worked out by the Ministry, or with private schemes approved by the Ministry. The subventions granted by the Land Bank to proprietors building with non-inflammable materials vary between 500 and 1200 lats. The subventions are paid in cash if the holding is not indebted in favour of the Land Bank. From these sums are deducted subsidies granted by the Government in supplying building materials at reduced prices.

The Latvian Chamber of Agriculture is assisting in the development of the country's prosperity. It compensates the farmers for part of the expenses to which they are subjected in irrigating and improving the hygiene of their properties.

The Ministry is authorized by special regulations to subsidize farm buildings erected on derelict land. There are 20,000 properties in Latvia ruined by the War for which the means must be found of constructing the most essential

buildings. To remedy this disaster, subsidies amounting to 5,417,277 lats have been granted by the Ministry of Agriculture.

Further, the Ministry ensures that the old war trenches are filled in and the ground levelled; in most cases this work is performed at the expense of the State. This intervention had resulted in 4,517 km. of trenches being filled in by March 1935. In removing parapets and filling in dugouts more than a million cubic metres of earth have been shifted.

On May 1, 1938, a law came in to force setting up a special fund for building working-class dwellings. This fund grants the money needed for constructing working-class dwellings and other buildings. Those having recourse to the fund for their building receive a cancellation of 50 per cent. of the loan; those not benefiting from this assistance receive a subsidy in cash. The resources of the fund are derived from half of a 1 per cent. tax on the sale of farm products, the other half being paid to the State Budget.

Between 1920 and 1930 farmers have constructed 324,432 fire-proof buildings at a cost of 573,325,394 lats; from 1930 to 1937 they built 69,195 buildings and 16,362 fire-proof buildings at a cost of 156,808,115 lats.

Labour and methods of farming.

The social structure of Latvia's rural population has been greatly modified as a result of the agrarian reform. The number of landless peasants working as farm labourers has been considerably decreased, since many of them have become landowners; these are the "new landowners" (in Latvian *jaunsaimnieki*). As the Board gave land not only to the farm labourers but also to townspeople who had taken part in the liberation of the country, the number of landowners has been greatly increased.

Number of farms classified by types, 1935.

	Number	Per cent.
Farms cultivated by their owner	232,978	84.51
Farms cultivated by tenant	30,108	10.92
Farms held in métayage	4,476	1.62
Farms lent to farm labourers as part payment of wages .	8,136	2.95
Total . . .	275,698	100.00

The owners and their families do nearly all the work themselves so that there are many holdings on which there are no wage-earners. According

to the 1935 census of farms, the number of agricultural wage-earners was as follows:—

	Number	Per cent.
Labourers engaged for the year	48,895	33.45
Labourers engaged for the summer season	45,986	31.45
Shepherds	40,049	27.39
Labourers engaged by the month	9,548	6.53
Technical Staff	1,722	1.18
Total	146,200	100.00

In those parts of the country where cultivation is more intensive, however, the lack of labour has been making itself felt during recent years. The working classes are attracted to the towns, where they can obtain commodities which are not to be found in the country. To check this exodus from the country, the Government has done much for the welfare of agricultural labourers. The Ministry of Agriculture has encouraged good housing by granting loans to proprietors and by supplying them with building materials at reduced prices. Labourers who have worked for one farmer for a long time are granted bonuses. Every month working-class families draw grants of from 4 to 5 lats for each child under eight years old. In the agricultural societies there are departments which attend to the spiritual and material needs of the workers. Finally, the Ministry of Agriculture assists in the purchase of agricultural implements and encourages the employment of modern methods of farming.

Progress in agriculture and stockraising.

The farms created by the agrarian reform have attained the average standard of agricultural development. Less conservative than the old landowners, the new farmers have frequently shown much more interest in the employment of modern methods of farming.

Very satisfactory crops have been obtained as a result of raising the standard of intelligence and through the technical assistance of the Government.

Average yield in quintals per hectare.

	1909-13	1920-24	1934-37	1937
Winter Rye	9.3	8.6	13.7	14.7
Winter Wheat	12.4	10.6	14.6	13.7
Summer Wheat	8.2	8.9	11.0	11.3
Barley	9.1	8.3	10.8	12.0
Oats	9.1	8.2	11.2	12.1
Potatoes.	80.3	90.1	131.8	140.2

Like agriculture, stockraising is now giving very satisfactory results and is the peasants' most important source of revenue. The number of farm animals has increased very considerably. In 1937 the number of horses had increased by 7.5 per cent. on the years 1925-34; the number of cattle by 16.5; that of pigs by 32.99 per cent. and that of sheep by 26.33 per cent. Similarly, the production of milk has greatly increased. While in 1927-28 a cow gave an average of 1680 kg of milk per annum, in 1936-37 it yielded 2290 kg.

As agriculture is the form of production best suited to the country, the Government has subsidised all branches of the rural economy, i. e. cultivation of cereals, stockraising, etc.

More than a third of Latvia suffers from excessive humidity, so that the Government and the farmers attach very great importance to the work of improving the soil. Now that the level of certain rivers and lakes has been lowered, it has been possible to start draining the fields and meadows. The farmers have formed Land Improvement Societies for digging the main drains; in 1938 there were 2300 such societies, with a membership of 70,000. The Government placed its technical staff at the service of these societies, while at the same time it is responsible for from 50 to 90 per cent. of the cost of the work. The Land Bank has granted long-term loans (28 years) towards helping the farmers to carry out the improvement of their land. From 1921 to 1937 the length of rivers deepened and drains dug was 20,750 km. The work has cost the Government 30 million lats and has enabled nearly 515,000 hectares of land to be drained. The farmers have at their service special bureaux which prepare improvement schemes. At a small charge, the Government hires out tractors and other agricultural instruments to the farmers for clearing the land; similarly, they pay 50 per cent. of the cost of transporting the drainage pipes.

The Chamber of Agriculture.

Up till 1935 farmers were grouped in several central organisations aiming at the development of agriculture. From this date a special law assigned the task to the Chamber of Agriculture. The Chamber consists of 120 members representing the farmers of whom 100 are nominated by the Minister of Agriculture, selected from lists of candidates drawn up by the agricultural associations; the other 20 are chosen from a list of candidates proposed by the chairman of the Chamber. The latter are chosen from the élite of the farming world; the Dean of the Faculty of Agricultural Science of the University of Latvia is a permanent member. The business of the Chamber is conducted by the President, the Council, and the General Assembly. The President and Vice-Presidents, five in number, are nominated by the Minister of Agriculture. These 6 persons together with a representative of the Minister of Agriculture form the Executive Committee of the Chamber.

The work of the Executive Committee is distributed between 15 departments:— (1) administration; (2) societies of agricultural economy; (3) agricul-

ture; (4) zootechnical; (5) economic; (6) labour; (7) cooperation; (8) instruction; (9) horticulture; (10) bee-keeping; (11) building; (12) technique and rural housing hygiene; (13) land improvement; (14) domestic economy; (15) pisciculture. This enumeration of the departments gives a general idea of the work of the Chamber.

The Chamber itself comprises 15 departments corresponding to those of the executive committee.

The General Committee of the Chamber coordinates the activities of the organizations formed for carrying out the work planned in the Departments and approved by the Executive Committee: it investigates problems affecting the development of agriculture, decides measures to be taken and checks the financial statement of the chamber before placing it before the general assembly. The President, the Members of the Executive Committee, and the Heads of Departments take part in drawing up the financial statement.

The funds of the chamber consist of (1) revenue from its own property; (2) payments for services rendered; (3) allocations from the State; (4) donations and unforeseen payments. In the financial year 1938-39, the Chamber's budget amounted to 3,517,283 lats. The Chamber possesses a considerable number of agricultural scientists and maintains several schools and experimental stations. It assists farmers to cooperate and encourages anything that may be conducive to the development of the different branches of agriculture.

Insurance.

There is a special assistance fund, whose activity is regulated by law, to assist farmers suffering from losses caused by hail, flooding or storms. The Ministry of Agriculture ascertains the losses suffered and fixes compensation in proportion to the damage.

The funds for this are obtained from (1) farmers' contributions; (2) Government subsidies; (3) donations. The farmers' contributions are very small, being about 0.05 per cent. of the value of the property.

In the same way, farmers are compensated for buildings, fruit-trees and fields which have sustained damage, if this damage does not amount to more than 25 per cent. of the value of the property. If the farmers' contributions are insufficient to compensate for the losses, the State makes up the difference.

In each commune there is a mutual fire insurance society with which farmers have to insure all their buildings. These societies also insure crops and livestock. All these societies belong to a central society by which they are reinsured for the most serious risks.

Price-control.

The control of the prices of farm products was begun in 1934 by the authoritarian government of the President, Dr. K. Ulmanis. Official institutions, the provincial cooperators and the central farmers organizations have been

called upon to collaborate in controlling the markets for agricultural products. These markets are authorised to buy the chief agricultural products at a price fixed by the Government and to sell them to consumers or to export them. This policy, which tends to keep prices stable throughout the country, influences private enterprise by forcing it to adapt its prices to those fixed by the Government. When the buying price is higher than the selling price, the difference is paid to the central organization by the Government. In fixing the prices for all the principal farm products the Government leaves a margin between the sale-price and the cost of production so that a normal return accrues to the farmer.

INTERNATIONAL CHRONICLE OF AGRICULTURE

NETHERLANDS

In the Netherlands small- or medium-sized farms account for most of the agricultural production, and from the point of view of employment of labour, farming is very intensive. Horticulture is also of very great importance. Such a distribution of farms, together with the large supplies of capital seeking investment, was bound to result in a highly developed specialization. On the other hand, this highly intensive farming made it impossible to obtain within the country all the raw materials required for animal production. For this reason, side by side with a large output of commodities obtained by a great outlay of capital and labour (butter, cheese, bacon, eggs, vegetables, fruit, flowers, flower-bulbs, etc.) there is a very large import of stock feeds. The reduced purchasing power from 1929 onwards curtailed trade in luxury products; later, the policy of import restrictions adopted by nearly all countries had even more unfavourable results. The position of Netherlands agriculture and horticulture during the crisis was thus one of extreme difficulty, and to meet it the Government was obliged to take special measures.

The following table gives some index-numbers which show the trend of prices paid to farmers for their principal products (average of prices from 1924-25 to 1928-29 = 100).

Products	1934-35	1935-36	1936-37	1937-38
Wheat.	77	70	68	69
Rye	65	63	75	64
Barley.	73	64	71	63
Oats	60	59	69	59
Potatoes	73	53	60	72
Beef	54	47	61	72
Pigmeat	44	50	57	75
Butter.	51	55	58	63
Cheese.	44	47	48	55
Fresh milk.	60	64	67	75
Eggs	41	43	49	55

The prices of animal products, especially in the later years, were relatively lower than those of the production requisites. This has actually been the Government's aim. There is already an overabundance of animal products and a favourable relationship between cost of production and prices obtained by farmers (allowing for taxes and subsidies) would result in another large increase in production. But the situation is not as unfavourable as the figures might suggest because considerable technical progress has been made in recent years.

With the beginning of 1938, the situation changed however; cereal prices on the international markets again fell, while those of animal products remained at the comparatively favourable level reached in 1937. Prices within the country followed the same trend but much less markedly: by means of import levies and subsidies to production, the level of the end of 1937 was on the whole successfully maintained.

The improvement in the situation in recent years is shown by the data from farm accounting for farms in certain areas representative of the country's agriculture:—

Area	Gross return	Farm expenses (1)	Difference
	(Florins per hectare)		
Grazing land districts, clay soil – Friesland:			
1935-36	268	144	124
1936-37	314	163	151
1937-38	353	182	171
Arable land districts clay soil – Friesland:			
1935-36	298	186	112
1936-37	370	211	159
1937-38	395	233	162
Sandy soil districts – Overijssel:			
1935-36	246	183	163
1936-37	308	206	102
1937-38	336	213	118
Delf and Schie areas in South Holland:			
1935-35	408	284	124
1936-37	470	312	158
1937-38	503	349	154

(1) Including estimated wages to adult children of the family working on the farm, but excluding estimated wage claims of farmers and taxes.

General tendencies of agricultural policy.

The policy of the Government has thus been as follows: An attempt was made to encourage the growing of cereals likely to find a market within the country (where prices might be influenced), at the expense of the crops grown for export. Wherever possible and desirable, the production of the export crops was reduced so as to limit the supply to the requirements of the home market. This limitation was not practicable for other products; in this case prices within the country were successfully raised by means of somewhat complicated method, and an average price, remunerative or nearly so, was secured for all production. This policy was carried out by

means of special organizations, set up for the purpose in accordance with the laws on the agricultural crisis (1). These organizations exercise some control over production, imports and exports, and even, in many cases, over consumption. They collect levies on certain products and pay out subsidies and rebates on others.

During the first years of the crisis the purpose of the measures taken was merely to protect certain branches of national economy against serious losses. The law of 1933 conferred more freedom of action on the Government, but still embodied the idea of assistance over a period of crisis. It was only later that the idea of a general definitive regulation began to make headway.

In the second half of 1936, when most countries seemed to have emerged from the crisis and when, on September 28 of that year, the Netherlands were obliged to abandon the gold standard, the foreign prices of agricultural products, expressed in Netherlands currency, rose very considerably. At this moment it became possible to simplify the intervention policy and at the same time to make it more permanent. This modification is still in process. The methods of assistance given to agriculture have varied in detail according to the nature of the various products. Experiments were made which it was often necessary to modify later. In the following survey only brief references will be made to these discarded measures. To avoid repetitions, it may be stated here that, speaking generally, the importation of the various agricultural products is placed under a monopoly or at least under a quota system, so as to protect the home market against foreign products. Moreover, monopoly taxes serve the twofold purpose of raising home prices and of financing the assistance given to agriculture.

For the export of Netherlands products compensation is often given to the producer for the increase in home market prices consequent on the measures relating to imports.

Wheat market.

The price of home-grown bread wheat is fixed before the sowings. It is a remunerative price, very favourable in comparison with the prices of most other products. Farmers consequently endeavour to grow as much wheat as possible, and hence the Government has had to intervene to limit the sowings (except for the smallest farms) to one third of the arable area. At the end of 1936 the limitation was abolished. From 1925 to 1929 the average area under wheat was 54,800 ha., in 1936 the area was 151,200 ha. Threshed home-grown wheat is bought by a special organization, membership of which is compulsory on the farmer and from which he may be expelled in the event of serious infringement of the rules prescribed, for example, for malpractices in connection with delivery. This organization delivers the quantities required for bread-making to another organization which, with certain exceptions, mixes the home-grown wheat with imported wheat—35 per cent. of the wheat milled for bread-flour must be home-grown—and delivers it to the mills. The flour produced from this mixture is sold to the bakers at a fixed price. Wheat, wheat flour and other cereals and cereal products, as well as pulses may be imported only through a monopoly organisation which imposes on the importers a levy known as "Difference between the monopoly's purchasing and selling price".

(1) Laws of May 5 and of August 5, 1933 (*Staatsbladen* No. 261 and 418). For a French translation, see the *Annuaire international de législation agricole*, 1933, p. 475 and p. 484.

Secondary cereals market.

For rye, barley, and oats, the subsidy measures result in prices relatively lower than those of wheat; this is reasonable in view of the fact that these cereals are mainly used as stock-feed and that it is essential to keep prices of livestock products as low as possible. Moreover, the bulk of these cereals and especially rye, grown mainly on the small farms of the sandy districts, is consumed by the animals on the farm itself. Measures in favour of these cereals are thus limited to: (a) a monopoly tax on imports; (b) a subsidy on barley production (threshed on the farm, under the supervision of an inspector of the Agricultural Crisis Service); (c) a denaturation bonus on imported rye, the object of which is rather to reduce the price of fodder rye—before the crisis, the Netherlands were among the largest importers of rye.

As soon as cereal prices rose, import levies were reduced and the two other methods of intervention were abolished. In 1938 levies were again increased on several occasions and in September the denaturation bonus on rye was reintroduced. Further in October and November 1938 the Central Arable-farming Organisation bought at a price higher than the market price, and temporarily stored, certain quantities of barley.

Results of the interventions have varied: the area under rye, which is grown mainly in the sandy districts and in the Fen Colonies, has further increased, although wheat-growing has been introduced into these regions; barley, within certain limits and on certain lands, is a remunerative crop and there has been an extension of its cultivation. In the case of barley a special and favorable factor was the introduction of malting barley, formerly very little cultivated in the Netherlands. Cultivation of oats, on which the import levy is lower than on the other cereals has somewhat decreased.

Pulses in shell market.

Normal prices have been fixed by the Government for peas, kidney beans and broad beans. In face of actual prices which, supported by a monopoly's import levy, had already before the 1936 harvest exceeded the established normal prices, the import levy only was maintained and a denaturation bonus for peas assigned, with the object of withdrawing from the home market a proportion of the surplus which was causing congestion. In 1936 a threshing bonus was introduced for beans similar to that given for barley. In 1937 this bonus was abolished and replaced by a denaturation bonus similar to that given for peas.

Flax market.

Flax fibre is an export product and for several years its price was much below costs of production. Encouragement was however given by the Government to this crop; in the first place it requires much labour (including processing during the winter), thus reducing rural unemployment, and, although this is a secondary consideration, it is very useful in the rotation. Bonuses were calculated up to 1936 for a maximum area of 15,000 ha., in 1937 the calculation was for 18,400 ha.: payment is made per harvested hectare. There is a processing bonus as well as a cultivation bonus.

Potatoes market.

After several attempts at subsidising, a cultivation fee was finally imposed in 1935 on potatoes grown for consumption with restriction of the area on which cultivation is allowed. The levy is used to pay denaturation compensation for quantities which cannot be sold for consumption.

Since 1930 the situation had become serious in regard to potatoes grown for potato starch, one of the main products of the Fen Colonies. After several attempts to improve the position of stocks, an export monopoly was adopted for the season of 1934-35. Since then, factories have obtained a remunerative price for their output and can now pay 1.30 florin per quintal for potatoes. Potato-growing is allowed only within certain limits, fixed in relation to the total quantities which it is considered can be utilized and to the character of each farm.

Sugar-beet market.

This product was among the first to be subsidized. Beginning with the 1931 crop, and for a certain percentage of the quantities delivered to the refineries during the three years 1928-30, a minimum price was guaranteed, based on the average price of sugar. In 1936 the quota for each farm was reduced, a supplementary quota being allowed in certain regions and to farms which owing to their special character are dependent on sugar-beet production.

Horticulture.

Certain limits have been placed on the area of vegetables in the open or under glass, of flower bulbs, of flowers, of fruit and small fruit, and of nurseries. Cultivation for the market beyond such limits is an infringement involving penalties. With some exceptions, all products for sale must be sold by auction. Vegetables which cannot be sold at a given price are distributed to needy persons, bottled or even destroyed, and the growers receive compensation. Prices of orchard and small fruits grown in the open or under glass have usually been high enough to make intervention unnecessary, except of course quota-fixing of the imports and the import levy. The fruit juice industry, which absorbs considerable quantities of fruit of inferior quality, is making steady progress; the demand on the part of the public has increased considerably in recent years. For flower bulbs, in addition to the restriction of areas and the principle of minimum prices, it has been made obligatory to consign certain hyacinth bulbs to an organization which purchases and destroys the unsaleable surplus; export is controlled. Although the financial results of these types of cultivation are still far from satisfactory, a considerable advance has been achieved as compared with the worst years of the crisis.

The Netherlands are large exporters of flowers and there is always a large demand within the country itself; there is however an excess import of ornamental plants. The position for growers of cut flowers still remains unsatisfactory; it has been necessary to destroy large quantities of flowers which found no buyers at auction sales. Measures taken in favour of nurseries do not greatly differ from those relating to other branches of horticulture. Mention may be made also of the credits accorded to horticulture. There is a gradual but slow improvement in the economic situation.

Stock-raising.

Cattle- and pig-breeding are of very great importance in the Netherlands. In 1937 permanent grasslands constituted 55 per cent. of the agricultural area. The relatively higher prices of crop products have had only a slight influence on the transformation of grasslands into arable lands; owing to the soil structure, the greater part of the grassland, although forming excellent meadow land, is not very suitable for ploughing. The cattle grazed are mainly dairy herds; meat is rather a bye-product. The milk not consumed in a liquid state is converted into butter, cheese, condensed milk and milk powder. The skimmed milk, buttermilk and whey of which there are considerable quantities, are used to fatten calves and especially pigs.

With a view to limiting animal production, breeding of calves and pigs has been made conditional on the issue of special permits. The effects of this measure can only be slow so far as cattle-breeding is concerned; farmers still have very large numbers of calves. As the old cows are replaced by young cows, the farmers take the opportunity to improve the quality of their stock. In this connection it is significant that 13 per cent. of the dairy cows were put under yield tests in special associations in 1937, and the total milk production is on the increase from year to year. Measures affecting prices are concerned mainly with taxes on consumption within the country and with export premiums. The result of these is an average price, paid to the producer, which is barely remunerative. An export monopoly was instituted at the end of 1936: only exporters belonging to the crisis organization set up for dairy products are entitled to export specified dairy products to countries specially designated. There was already in existence an import monopoly both for dairy products, imports of which are of very little importance, and for beef. The consumption tax on meat, the proceeds of which were devoted to the crisis funds was abolished at the end of 1937.

There has been a more effective limitation of pig numbers. Here also the price policy has been of great importance. Although the pork butchers retain the right to buy pigs for slaughter, the purchases of the central organization for carrying out crisis measures in regard to pigs outweigh all others. This body pays prices varying with the quality. Moreover, the central organization, during certain periods, purchased only bacon pigs, that is, pigs weighing less than 60 kg. As a result of these measures, there was a decline in the total numbers of pigs, from 2,082,000 in May 1934 to 1,406,000 in 1937, while the numbers of pigs weighing over 60 kg. fell from 735,000 to 372,000 in the same period. Subsequently, owing to the improved situation, there has been an increase: in May 1938, the figures were respectively 1,538,000 and 388,000. From 1930 to 1937, the number of members on the Herdbooks for pig-breeding rose from 2,230 to 12,865, the number of boars awarded premiums for quality increased during the same period from 470 to 1,788, and the percentage of sows served by boars registered in the Herdbooks rose from 13 to 71 per cent.

An existing tax on pigmeat was abolished at the end of 1936.

There has been an increasing interest in *horse-breeding*, and the number of mares served rose from 44,700 in 1934 to 60,900 in 1937.

Sheep-breeding is of no great importance. The interest in *goat-breeding* is to be attributed mainly to the constant need existing among large groups of the population to reduce cash expenditure as far as possible.

The poultry industry, which at the beginning of the century was so little developed that the Netherlands was a large importer of eggs, has since then shown a steady increase. It attained very great importance in particular after the world war and now the country stands second on the list of egg-exporting countries.

Poultry-keeping is partly carried on on specialized holdings but mainly on farms where it is a very useful side-line, this being the case particularly of small farms in sandy districts. For this reason and also because poultry-raising requires a great deal of labour, it is not practicable to reduce production to any great extent, although prices on foreign markets are not at all satisfactory. The object of the measures taken is thus rather to prevent increase in total production while increasing the yield per hen. In the first place, hatchings in incubators beyond a certain quantity and for longer than a certain period are prohibited. Even on the small farms, chicks used for breeding purposes are bought mainly from specialized breeding farms. As a result of the restriction of the hatching season to a period ending at the beginning of May, the young hens are already full-grown and strong at the beginning of winter. A regulation encouraging the purchase by the hatching farms of eggs from breeders with a reputation for the quality of their birds has still further influenced the quality of the poultry.

Exports of eggs and poultry at the prices ruling on the English market cannot be remunerative, largely because of the relatively high prices of poultry feeds. To balance these prices, rebates are given on exports; these are too low to be regarded as actual premiums.

Special measures for small farms.

All the measures mentioned above aim at making certain types of arable farming and stock-raising reasonably remunerative. But they mainly affect large and average sized farms, so that the small farms have gained relatively little benefit from them. To deal with these a special organisation has been set up.

The small farm plays a very important rôle in Dutch agriculture. It makes it possible for a farm labourer to achieve independence. As a result agricultural areas where there are adequate possibilities of forming such farms, especially sandy areas, are less depopulated than others. In addition small proprietors make excellent citizens and help greatly in the accumulation of new capital, since they are keen, they have a sense of responsibility and they are eager to save. To encourage the growth of this class a law was passed in 1918 assisting agricultural labourers to obtain a dwelling and a piece of land. With the same object, facilities were given in 1919 for forming small farms on land which had been newly broken up. In 1934 it was decided to found a special bureau for small farms. This bureau made a thorough investigation before deciding on the methods to be employed. As a result of this investigation, small farmers were divided into three groups:— (a) those working regularly for other farmers; (b) those working chiefly on their own land who, as it does not use all their time, seek occasional work on larger farms, the return on their own land being too small for them to live on; (c) those whose whole time is spent on their own farms, too small for subsistence in bad seasons.

Action regarding group (a) is a problem of unemployment and is therefore dealt with by the Ministry of Social Affairs. Action in relation to group (c) is concerned with the yield of the farm and is decided by the Ministry of Economic Affairs. Problems affecting group (b) are dealt with by these two Ministries together. The ordinary scheme for unemployment assistance covers the needs of the first group. These workers, like those owning no land at all, receive a regular payment throughout periods of unemployment. In addition, an attempt is made to employ them in the public utility works which have been started of late years to reduce unemployment. The work on behalf of groups (b) and (c) has been centralised at the Bureau

for Small Farms, which began taking direct action on November 1, 1937. Each small farmer receives personally advice and information from assistants on the staff of agricultural advisors. Each assistant looks after the interests of a very small number of farms. So long as they follow the advice given, the farmers in group (b) receive a payment in cash each week, while those in group (c) receive tickets for obtaining farm equipment at very reduced prices or sometimes even free. The cash payment varies directly with the return from the farm and inversely with the size of family. The tickets are given after the responsible assistant of the Bureau has calculated the need for chemical manure or of food for livestock; or where he is convinced that the farm needs certain machines or tools. The object of these tickets is not so much to obtain equipment for the farms but rather to enable the farms to follow the advice given.

After one year's operation, great progress can already be recorded and it is expected that certain improvements may serve as models even for the larger farms.

Drainage of a part of the Zuyderzee.

The formation of the north western polder, the Wieringermeerpolder, and the construction of the dyke which separates the southern part from the open sea, were finished several years ago. In the polder, the digging of canals and the laying out of roads are continued, as also the improvement of the soil and the erection of farm buildings and of buildings for public services, etc. All this is effected at the expense of the State; farm holdings are then rented off where after several years of cultivation the structure of the soil and the low percentage of sea salt reached makes it possible to expect satisfactory yields. In 1938 the area worked by the special organization founded by the State for the land improvement was 7,609 hectares, there are besides 8,647 ha, forming 214 fully equipped farms with buildings and 1,113 parcels rented without buildings, and 631 hectares were taken up by plantations of young trees, villages, etc. Lands intended for buildings other than farm buildings are leased on terms of emphyteusis. The land-rent is fixed on the basis of the index-numbers of prices of agricultural products, calculated by the Bureau of Agriculture, separately for arable and for grazing lands. On November 1, 1938 a further 54 farms of a total area of 1,915 ha. were rented.

The new polder is not yet divided into communes, but is administered by a public body of a form which is new to Dutch law (1); this corporate body, *De Wieringermeer*, is made responsible for the improvement of the lands for agriculture, and for the construction of dwelling houses and roads; this body has the administration of the State properties and is entitled to farm up to a maximum of 1,000 hectares on account of the State; it has to administer all interests relating to the water-ways or water supplies within, and, for certain purposes, outside the polder; and finally to take all measures which are ordinarily within the competence of the communes.

The construction of the dyke for the second polder situated at the north east of the lake is going forward. This polder will have the advantage of the immense experience gained from the Wieringermeer; in addition the reclaimed land will from the outset have a much reduced percentage of sea salt, as it is now covered by the fresh water of the Yssel Lake, whereas the dykes of the first polder were finished before the closing of the great dyke which formed the new lake.

(1) Law of May 31, 1937, *Staatsblad* No. 521.

Law on tenancies.

The law on rural leases was revised by a Law of May 31, 1937 (1). Up to this time they had been regulated by the Civil Code introduced into the Netherlands in 1838 and based on the Napoleonic Code. The new law contains a number of stringent provisions. The length of the lease, except in rare cases, is not fixed; the contract cannot be dissolved till after ten years and only at one and a half years' notice. Both landlord and tenant have quite definite obligations. The landlord is required to deliver to the competent magistrate a signed copy of the lease. If the magistrate considers that the rent is too high to ensure a reasonable standard of living for the tenant and if he does not succeed in obtaining the consent of both parties to a reduction, he can annul the lease. If the landlord has not delivered the required copy within the stated period, the terms will be presumed to be in agreement with the current usages for farms or lands of similar character, except as regards provisions which may be more favourable for the tenant. The landlord is bound, for the duration of the lease, to undertake all the repairs necessary, other than the small upkeep repairs which are the duty of the tenant; if he omits to fulfil this obligation after written notification from the tenant, the latter has the right to carry out the repairs himself at the expense of the landlord. As a rule, the landlord is bound to pay to the tenant, on the expiration of the lease, fair compensation for improvements made by him. Under certain conditions, the tenancy may be modified during the duration of the lease, in favour of one or the other party.

In the event of notice to quit being given by the landlord, the tenant may apply to the court for annulment of the notice; the magistrate will refuse such application only under certain conditions. Compensation may also be granted. Special courts have been set up for hearing these cases. These are the cantonal tenancy commissions of the canton court of justice, consisting of the canton magistrate as president and two experts. In addition organizations having legal personality have been instituted with the object of promoting good relations in respect of rural leases. These bodies, the recognized Tenancy Offices, will have the right to approve leases and when thus approved, there will be no obligation on the landlord to deliver a copy to the magistrate. These Offices will also give advice on tenancy questions and will draw up standard contracts. The law came into force on November 1, 1938.

Law on agricultural exports.

The new Law of February 4, 1938 on the export of agricultural products (2) replaces the law of 1929. The former law had regulated exports of butter, cheese and bacon and had empowered the Government to regulate exports of other products by means of regulations of public administration to be ratified afterwards by law. The law of 1938 regulates exports of 53 agricultural and horticultural products and provides that not only the products themselves but also their packing shall be subject to criteria of quality. Control at the time of export may be in the hands of private institutions having legal personality. The new law does not so much introduce fresh regulations as confirm and extend the action already taken by private initiative or by the agricultural crisis legislation.

(1) Law of May 31, 1937, *Staatsblad* No. 205. For a French translation see the *Annuaire International de Législation agricole*, 1937, p. 77. — (2) *Staatsblad*, No. 600.

Law on consolidation of holdings.

The new law on consolidation of holdings (1) greatly facilitates the procedure. Under the law of 1924 the application for consolidation had to be signed by at least one fourth of the landowners; now, it is enough if one fifth sign; the initiative in the matter is also conferred on agricultural associations and on certain bodies having legal personality. Under the former law, the scheme had to be approved by a majority of owners who were also owners of more than one half of the lands; now it is required only that one of these two conditions shall be fulfilled.

UNITED KINGDOM

In the summer of 1937 industrial prices began to fall while agricultural prices continued to rise; at the beginning of 1938 both industrial and agricultural prices were falling; now, in the second half of 1938 industrial prices have been steady while agricultural prices have continued to fall rapidly.

The check to the fall of industrial prices suggests that the deterioration of the general economic situation in the United Kingdom, which has been going on since the summer of 1937 is being halted. The rapid increase in the number of unemployed—from 1,413,000 in 1937 to 1,708,000 in the first quarter of 1938—has ceased; the figure for the third quarter of 1938 was 1,716,000. The index of industrial production prepared by the Board of Trade has however continued to fall. There is as yet little evidence of increased prosperity likely to have a favourable effect on the agricultural situation. The level of money wages remains steady and the number of persons employed has fallen slightly in recent months.

The index of the level of prices of agricultural produce fell from 90 in June to 82 in November (2), this latter figure being the lowest since September 1936. The prices of cereals and farm crops have fallen more sharply than have the prices of livestock and livestock products. The greatest individual changes shown in the index have been the fall in barley price index from 120 in January to 68 in November and in wheat prices from 83 in January to 44 in November. The index of sheep prices fell from 82 in January to 67 in November; fat cattle prices have changed much less, the index being 89 in January and 80 in November.

The fall in barley prices must be in part attributed to the heavy home-harvest; the estimated total produce in 1938 was over 933,000 long tons, that in 1937 was 705,000 and the average for the years 1927-36, 867,000 long tons. Sheep prices have fallen much more heavily than is warranted by any apparent change in the supply position; home marketings of sheep and imports of mutton and lamb were not much different from the average. Some explanation of the fall may be found in the bad situation of the skin and wool trades adversely affected by world conditions.

Agricultural imports in the first nine months of 1938 valued £ 305 million, to be compared with £ 294 million for the first nine months of 1937 (3). The quantities

(1) Law of May 20 1938, *Staatsblad*, No. 618. For a French translation, see *Textes législatifs série 1938*, No. 26, published by the International Institute of Agriculture.

(2) Base, 1927-29 = 100; corrected for seasonal variations.

(3) Figures for "Food and Drink."

imported were at about or below the average except in the case of barley and of cereal bye-products both of which were considerably larger. The average for the years 1933-37 of barley imports during the first nine months of the year was 541,000 tons; during January-September 1938 727,000 tons were imported. Wheat imports were also slightly above the average.

Meat imports were about the average weight. Mutton and lamb imports during January-September 1938 weighed 272,000 tons, the average for the same period for the years 1933-37 was 268,000 tons.

The fall in the prices of agricultural produce has been in some part offset by a decrease in the cost of fertilizers and feeding stuffs. The Ministry of Agriculture's Index (base, corresponding months 1911-13 = 100) of the prices of feeding stuffs fell from 127 in January to 117 in June and to 97 in November; fertilizers prices which had remained steady during the first half of the year at 94 fell to 93 in October and November.

Protection against the effect of falling prices is now afforded the United Kingdom farmer by various Government price guarantees and other assistance. This protection is however given only in respect of certain products and is less close for one product than for another. Thus at this time when prices of both wheat and barley have fallen heavily the position of the wheat-grower, who is guaranteed a minimum price of 10s. per cwt. for his produce—the present market price is less than half of this—is contrasted with that of the barley-grower, who, although entitled to a subsidy when the market price falls below 8s. per cwt., is not guaranteed a minimum price as his subsidy is less than equivalent to the price deficiency. The producer of fat cattle is entitled to a subsidy and his market is protected by quantitative import regulations closely related to the market situation; the sheep-farmer, on the other hand, has no subsidy and his market has been less closely protected by import regulations.

The weakness of the markets for sheep and barley is all the more serious as these two products are the main products of many farms on the light soil of eastern England. The farmers appealed to the Government for assistance, and in December 1938 the Minister of Agriculture announced measures of assistance for them. The barley subsidy is to be increased and the imports of mutton and lamb are to be closely regulated. These measures did not satisfy the farmers.

At the same time a Milk Bill introduced to extend and consolidate with important amendments, existing measures, was withdrawn by reason of strong objections, particularly from the English Milk Marketing Board (1).

In view of these difficulties the Government decided to reconsider its agricultural policy as a whole; and the new measures planned for milk, wheat, and poultry are being held in suspense for the present.

Trade agreement with the United States.

This agreement, signed in November 1938, highly important for the general economic situation, has but small direct effect on the position of the United Kingdom farmer. By the agreement the United States undertakes to lower import duties on a wide range of goods, mainly industrial, and the United Kingdom, to lower

(1) A description of this Bill and an account of the conditions and prices for the milk market for the contract year 1938-39 will be given in a subsequent number of this *Chronicle*.

duties on industrial goods, raw materials and food products. The main agricultural imports into the United Kingdom which are affected are wheat, maize, pig products and fruit. The 2s. per quarter import duty on wheat is removed; the United Kingdom farmer is protected against the effects of this change by the provisions of the Wheat Act, 1932 (1). Maize imports are to be free of duty till the end of December 1941; they were, however, previously free of duty till the end of December 1939 in accordance with the existing Anglo-Argentine agreement. Duty free entry of hams is to be continued and the United States' quota increased (2), and at the same time the 10 per cent. duty on lard is to be removed; the pig-breeder is protected against the effect of an increase of ham imports by the provisions of the Bacon Industry Act, 1938 (3) and a new measure has been introduced to adjust the position to the change in the condition of lard import (4). The duties on apples and pears are to be reduced; the new rate has, however, an incidence of over 15 per cent. ad valorem, and the United States has undertaken to call the attention of American exporters to the desirability of co-operating with the Empire Fruit Councils set up to plan shipments so as to avoid excessive fluctuations of supply and prices.

Of advantage to the United Kingdom farmer is the reduction of the duty on agricultural tractors imported into the United Kingdom.

Import regulations.

Mutton and Lamb. — Imports of mutton and lamb into the United Kingdom were first quantitatively regulated in accordance with the Ottawa Agreements Act of 1932; this provided for the limitation of supplies from foreign countries to given maximum quantities fixed from time to time as a percentage of those imported in corresponding quarters of the Ottawa Year. Further, since 1935 imports from British Empire countries have been regulated by agreements made from time to time between the United Kingdom and Australia and New Zealand, the two main Empire suppliers.

Now, in view of the bad position of the sheep-farmer in the United Kingdom, the Minister of Agriculture has, after consultations with the Australian and New Zealand Governments, decided that in future imports into the United Kingdom shall be regulated in the following way. Supplies from the Empire countries shall be regulated by the Empire Beef Council whose functions are to be correspondingly enlarged. This Council was set up in 1937 to consider Empire aspects of beef supplies to the United Kingdom and works in association with the International Beef Conference (5). The Council is to consider the mutton and lamb supply position as a whole (6). At the same time the Government itself is to regulate imports from foreign countries. For this purpose an order has been made providing that live sheep, mutton and lamb shall be imported into the United Kingdom only under licence (7).

(1) See the September 1938 number of the *Chronicle*, p. 437 and p. 42 of the present issue.

(2) The Dutch quota has been adjusted by agreement.

(3) See the September 1938 number of this *Chronicle*, p. 434 and p. 43 of the present issue.

(4) See p. 44.

(5) See the April 1938 number of this *Chronicle*, p. 214.

(6) In this connection was made the Ottawa Agreements (Importation of Wheat) Amendment Order, 1939 (S. R. and O. 1939. No. 5).

(7) Sheep, Mutton and Lamb (Import Regulation) Order, 1939 (S. R. and O. 1939 No. 4).

Home market regulations.

Wheat Levy and Subsidy. — The wheat-grower is guaranteed, by the provisions of the Wheat Act, 1932, a price of 10s. per cwt. He is entitled to receive from the Wheat Commission a subsidy to make good any deficiency in his returns due to the market price being lower than this; funds for this purpose are obtained by the Commission from a levy—"quota payments"—imposed on millers and importers of flour. In the year 1937-38 the market price received for wheat was officially ascertained to be slightly less than 8s. 5d. per cwt. At the end of 1938 the price had fallen to less than 4s. 5d. per cwt. In view of this the Wheat Commission has increased the quota payments due to it.

The good prices obtained for wheat at the beginning of 1937 had allowed the suspension of the payments, for the first time since the beginning of the scheme. In September 1937 they were reimposed at the rate of 2.4d. per cwt., and the rate has since been continually and rapidly increased (1) till at present it is 28.8d. per cwt. the highest rate ever fixed.

At the same time the maximum amount of wheat on which the Commission will pay a subsidy has been raised. For the season 1937-38 the amount was 25,000,000 cwt.; for the present season, 1938-39, the amount was first fixed at 30,500,000 cwt. but has now been raised to 33,000,000 cwt. (2). This latter figure is also the highest since the beginning of the system.

Oats and Barley Subsidy. — By the Agriculture Act, 1937, the grower of oats or barley was given the right to receive from the Government whenever the price of oats fell below 8s. a hundredweight, a subsidy equal to six times the deficiency in price or £1 per acre, whichever is less. This subsidy is payable not on each hundredweight sold but on each acre under oats or barley; and as the yield of oats and barley is about 14-16 hundredweights per acre the subsidy does not fully compensate the grower for the deficiency in price. Moreover the subsidy is based on the price of oats and is independent of the barley price.

Thus the barley-grower had less protection from the heavy fall in prices that has occurred in recent months, than had the wheat-grower.

Moreover a farmer could not receive both a deficiency payment under the Wheat Act and also a subsidy on his barley and oats acreage. Therefore, as many barley-growers also grow wheat on a large scale, many receive no subsidy at all on their barley acreage.

To assist further those farmers whose main corn crop is barley the Government propose to invite Parliament to increase the subsidy payable this year, from the 10s.

(1) See previous numbers of this *Chronicle*. Wheat (Quota Payment) No. 5 Order 1938, which came into force on October 16, 1938 fixed the rate at 2.4d. per cwt.; No. 6 Order 1938 fixing the rate at 28.8d. per cwt. came into force on November 13, 1938.

(2) Wheat (Anticipated Supply) No. 2 Order 1938 fixed the amount at 30,500,000 cwt.; No. 3 Order 1938 raised it to 31,850,000 cwt.; and No. 4 Order, made in November raised it further to 33,000,000 cwt. The maximum amount on which a subsidy may be paid is fixed by the Wheat Act, 1932, as amended, at 36,000,000 cwt. See in this connection the *Chronicle* for January 1938, p. 58.

per acre, which, it is estimated, would be payable under present arrangements and conditions, to £1 an acre. This is regarded as an emergency measure.

The barley-grower had previously,¹ and still retains, a further measure of protection in the undertaking given by the Brewers Society in 1936 to purchase each year a minimum quantity of 7,500,000 cwt. of home-grown barley and to increase their purchases *pari passu* with any increase in the production of beer over that in the year ending September 30, 1935. In the year 1934-35 the brewers purchased 7,458,000 cwt., in 1935-36, 7,729,000, in 1936-37, 8,189,000 and in 1937-38, 8,063,000 cwt. Over the same period the price paid rose from 8s. 1d. per cwt. to 11s. per cwt. Between 1936-37 and 1937-38 the amount purchased fell although the production of beer increased; the reason for this is that the 1937 crop of malting barley was insufficient to meet brewers requirements.

Bacon-pigs, Marketing Scheme Contracts. — In accordance with the provisions of the Bacon Industry Act, 1938 (1), the Pigs Marketing Board has fixed the terms of the yearly contracts for the supply of bacon-pigs, during the year December 1938-November 1939; 1,479,226 pigs were offered. The maximum number that might be put under contract in this first contract year was fixed by the law at 2,100,000. The number actually put under contract is less than the total offer in 1937, when the contract system of the marketing scheme then in operation was declared null and void by reason of the insufficiency of the total offer.

This deficiency resulted under the old scheme in a re-establishment of a free market in bacon-pigs. The new scheme requires, however, registered pig producers and registered bacon curers to buy bacon pigs only under long term contracts. The Bacon Development Board is empowered to grant special exemptions from this provision, and has in fact done so for the months of December 1938 and January 1939. The number of pigs that may be so bought is limited by the Board and the prices paid are to be 6d. per score lb. less than the contract price.

The basic price for the standard bacon pig sold under contract has, according to the Act, to average 12s. 6d. per score lb. in the first contract year. The price has in fact been fixed at 17s. 6d. per score for each of eight months of the year; in February and March it is, however, to be 13s. and in October and November 12s. per score.

The basic price is the price to be paid when the standard feeding ration costs 8s. 6d. per cwt. The actual price to be paid is to be varied in accordance with variations in feeding-stuff prices. From 1936 to the summer of 1938 the officially ascertained price of the standard feeding stuff ration rose rapidly; at the beginning of 1936 it was about 7s. 9d.; by the end of 1936 it was over 9s.; in 1937 it rose from 10s. to about 10s. 4d. and remained at about this figure till the summer of 1938.

The new scheme was therefore evolved when feeding-stuff costs were high, and the new price regulations show a greater improvement on the old when feeding costs are high than when these costs are low.

Since the summer of 1938 the price of the standard ration has however fallen rapidly and in December, the first month of the new contract it was 8s. 4d., that is lower than the standard and for January 1939 it was 8s. 1d. The prices per score of the standard bacon pig sold under contract in these two months were accordingly less than the basic price, 12s. 6d., and were 12s. 4d. and 12s. 2d. respectively.

(1) See September, 1938 number of this *Chronicle* p. 434.

The allocation of the contracts among bacon curers has given rise to objections. One of the functions of the new Bacon Marketing Board is to allocate, on the instructions of the Bacon Development Board, production quotas to bacon factories. The quotas for the contract year 1938-39 were based on the hypothesis that 2,100,000 contract pigs would be available, the number permitted by the Act. As only about 1,500,000 pigs were obtained on contract, each factory's allocation of contract pigs had to be reduced in proportion. Every curer was not entitled to retain all the contracts he was able to obtain; the Bacon Development Board aimed at an equitable distribution of the total supply of pigs among all the bacon factories. Two reasons made such an equitable distribution highly desirable; the first is that the subsidy, having the object of stabilising prices both for pig-producers and also for bacon-curers is related to contract pigs only; the second is that as costs depend to a large extent on the volume of throughput and as all curers are required to pay the same price for contract pigs, no curer should be more short of supplies than another.

The removal of the 10 per cent. duty on lard imports, required by the Trade Agreement with the United States of America, has affected the operation of the pigs and bacon marketing scheme. The Bacon Industry Act, 1938, provided for given bacon prices in the first three years of the scheme. Now an amendment Bill, introduced by the Government provides for an adjustment of these fixed prices to changes in lard prices. A "notional", or standard price of lard is to be established; 65s. per hundredweight for the first contract period, 63s. for the second, and 59s. for the third. The Minister is then to ascertain actual lard prices; and if the ascertained price exceeds or falls short of the "notional" price the bacon prices fixed by the Act are to be decreased or increased by 1d. per hundredweight for each 1s. per hundredweight difference. These provisions relate only to bacon made from long contract pigs.

Fat Cattle Subsidy. — The subsidy on fat cattle continues to be paid at the new rates established by the Livestock Industry Act, 1937. The total payment during the first year of the new rates, which began in August 1937, was about £ 4,000,000; this is about the same as the yearly total of the subsidy paid in the preceding years.—a subsidy on fat cattle was first introduced by the Cattle Industry (Emergency Provisions) Act, 1934.

A change in the regulations governing the payment of the subsidy, was made in the summer of 1938. The regulations provided that fat cattle certified for subsidy should be divided according to whether they conformed to an "ordinary" or to a "quality" standard. These standards were defined by the reference to the description of the animal, i. e. its conformation, finish and ripeness; it was also provided that an animal should have an estimated killing-out percentage of not less the 54 for ordinary standard and of not less than 57 for quality standard. The requirement that "quality" animal shall have a higher killing-out percentage has now been abolished. Although this involves no lowering of the effective standards of eligibility for subsidy, the new regulations will allow a greater proportion of the total animals on which a subsidy is payable to give a right to the higher quality subsidy. It is estimated that this will increase subsidy payments to £ 4,300,000 a year. The maximum subsidy allowed by the Act is £ 5,000,000 a year.

SWITZERLAND

During the five months July to November 1938 imports of industrial products fell below the level of 1937 while those of agricultural products rose by 3.33 per cent. Exports in general showed a decrease, less marked in industrial than in agricultural products.

Period	Imports				Exports			
	Industrial products		Agricultural products		Industrial products		Agricultural products	
	Thousand francs	Index numbers	Thousand francs	Index numbers	Thousand francs	Index numbers	Thousand francs	Index numbers
January-June 1937	611,665	100 —	318,095	100 —	529,646	100 —	49,276	100 —
January-June 1938	522,940	85.49	258,471	81.25	561,452	106.01	56,900	115.65
July-November 1937	508,339	100 —	205,425	100 —	524,492	100 —	59,920	100 —
July-November 1938	461,776	90.84	212,256	103.33	520,848	99.31	52,948	88.36

The restrictions on imports underwent no modification, for the Department of Economic Affairs rejected all attempts to extend them or to re-introduce any which had been abolished. The only exception is the duty on asparagus in excess of the quota, which was raised from 35 to 60 francs (1). The course of prices in Switzerland was affected quite perceptibly by the decline in world prices during the early months of the year and their gradual rise from the beginning of June. After showing some decline, retail and wholesale prices in Switzerland have now returned to practically the same level as before the depreciation of the currency. Between January and June 1938 the index-number of wholesale prices fell from 113.6 to 110.6 (September 1936 = 100). The rise caused by the depreciation was therefore in the proportion of 10.6 per cent. The index-number of the cost of living for the same period (January-June 1938) also showed a slight decline, falling from 106.2 to 105.4.

Cereals.

The greater part of the cost to the Confederation in respect of the country's wheat supply is incurred in the payment of a subsidy on the price of home-grown wheat, that is to say, the difference between the price guaranteed to growers and the actual price paid by millers to the Confederation. While the purchase price is fixed in accordance with Art. 6 of the wheat law, the selling price is based on the average net price of foreign wheat of equivalent quality, delivered free at the Swiss frontier, duty paid.

(1) XVIIIth report of the Federal Council to the Federal Assembly on measures of economic protection against foreign competition. *Feuille fédérale*, No. 35 (August 31, 1938).

Should world prices decline and the purchase price of home-grown wheat remain unchanged, the cost of the subsidy would increase. When, in July 1938, the accentuation of the decline in the world prices of wheat betokened excessive reductions in the prices of Swiss flour and bread by the middle of the following month, the Federal Council for a moment contemplated reducing growers' prices. It was evident, however, that such a course would signify the abandonment of the principal object of the wheat policy namely, the expansion of cereal cultivation with a view to relieving the congested state of the livestock and milk markets and to increasing grain production.

The Federal Council was thus led to examine the possibility of increasing the customs duties on wheat from 0.60 to 3 fr. per quintal. This increase of 2.40 fr. per quintal on wheat and rye may increase the receipts of the State by 10 million fr. annually. The increase in the duties would justify an increase of 2.4 centimes per kg. in the price of bread; this, however, will not be necessary since the heavier duties will be largely counter-balanced by the decline in prices. There will be no increase in wheat prices unless the market is disturbed by unexpected events. Should quotations on the world market strengthen and thus tend to raise the price of bread wheat, the Federal Council will consider to what extent the duty should be reduced in order to avoid an increase in the price of bread (1).

In view of these considerations the Federal Council by a Decree of August 13, 1938, raised the import duties on wheat and rye by 2.40 fr. per quintal (2). The supplementary law of September 13, 1938, fixed the purchase prices of home-grown wheat of the 1938 harvest at the levels of the preceding year, namely: 36 fr. per quintal for type standard I; 37.50 fr. for type standard II; 38.50 fr. for type standard III; and 28.50 fr. for rye (3).

The provisions of the Law of November 5, 1937 on compensation to millers milling whole-meal flour was modified as follows by a Federal decree: the amount of the compensation is to be fixed periodically by the Department of Economic Affairs in accordance with the conditions of the breads cereals market (4).

Fruits and potato market.

The improvement in the financial position of the State Alcohol Monopoly which began in 1936-37, was maintained in the following year, the profits of each year amounting to approximately 5 million fr. During the 1937-38 season, however, it was necessary to liquidate stocks amounting to 1,615,620 fr. of which stone-fruit brandy represented 1,426,117 fr. Most of this brandy was transformed into fuel and industrial alcohol. The result may be regarded on the whole as satisfactory in view of the exceptional apple harvest of 1937. The Monopoly succeeded in limiting its acquisitions of brandy to such an extent that the expenditure for brandy and alcohol derived from stone-fruit amounted to only 1,644,543 fr. as compared with the budget estimate of 5,770,000 fr. To attain so satisfactory a result the Monopoly encouraged in all possible ways fruit utilization other than distillation.

(1) *Feuille fédérale*, No. 36, (September 7, 1938). — (2) *Recueil des Lois fédérales*, No. 29 (August 17, 1938). — (3) *Recueil des lois fédérales*, No. 32 (September 14, 1938). — (4) *Recueil des lois fédérales*, No. 25 (July 13, 1938).

Sales did not realize the amount estimated in the budget but receipts from the taxes on specialities, direct sales and monopolies exceeded the estimates.

By a Decree of August 26, the Federal Council authorized the Alcohol Monopoly to take steps to reduce brandy production by granting subsidies for the promotion of fruit exports and for the maintenance of the fruit supply for home consumption. The Monopoly was also empowered to limit distillation (1).

In accordance with the arrangement made by the German-Swiss Commission, 70,000 quintals of perry pears of the 1938 harvest were exported to Germany and a further 80,000 converted into concentrated fodder juice.

The Federal Council decreed that apples and pears (whether fresh or dried), apple- and pear-juice and dried fruit residue may not be exported unless accompanied by a declaration that the quality of the goods is approved by the Fruit Union (2).

The Council has also given some attention to the improvement of fruit-growing. By a Federal Decree of November 12, 1938, the Alcohol Monopoly and the Department of Agriculture were authorized to take during the winter of 1938-39 and spring of 1939 such measures as would render possible the cultivation in orchards of table fruit and good cider fruit. Courses of instruction will be organized and model orchards set up. Expenditure for the re-conditioning of orchards will be refunded to the cantonal agricultural stations entrusted with the direction and supervision of the work. Subsidies will be granted for the encouragement of grafting (3).

The utilization of potatoes harvested in 1938 is provided for by a Federal decree (4) empowering the Alcohol Monopoly to organize purchases of home-grown potatoes. The Monopoly also organizes and subsidizes their transport from the producing areas to the centres of consumption. The basic prices were fixed at 7-10fr. per 100 kg., according to quality, with a possible increase for those delivered after November 15, 1938.

Livestock.

The Federal Department of Economic Affairs has taken steps to encourage sales of livestock. They include a regulation entitling exporters to a premium not exceeding 25 per cent. of the cost price, as shown on the receipt, for bulls, cows and heifers bought and exported between August 22 and November 30, 1938. The exports, quality and price of the animals were subject to approval. Extraordinary subsidies were granted to stock-breeding associations for the purchase of male animals of pure strain during the 1938-39 breeding season. Facilities are granted for the transport by railway of cattle, sheep and goats intended for breeding, stock or slaughtering; for the transport of horses bought at certain fairs in stock-breeding districts, and of mutton sheep from mountain regions (5).

The reduction of 50 per cent. on railway transport charges for livestock was extended to January 1, 1939 (6).

(1) *Recueil des lois fédérales*, No. 30 (August 31, 1938). — (2) *Ibid.*, No. 32 (September 14, 1938). — (3) *Ibid.* No. 40 (November 16, 1938). — (4) *Ibid.* No. 30, (August 31, 1938). — (5) *Ibid.*, No. 28 (August 10, 1938). — (6) *Ibid.* No. 40 (November 16, 1938).

Milk.

As we have seen the Department of Economic Affairs wishes to reduce milk production as far as possible and it therefore issued an Order requiring commercial producers of milk to contribute to the guarantee funds of the Central Union of Swiss Milk Producers (1). Exemptions are granted in the following cases: farmers who produce during the year 1938-39 less than 800 kg. of milk for manufacture per hectare of cultivated land; farmers who produce during the same year per hectare of cultivated land between 800 and 1400 kg. of milk for manufacture, provided that this amount does not exceed the average yield per hectare in the two preceding years: farmers who produce during the year 1938-39 less than 3000 kg. of milk for manufacture provided that the milk conformed to the Swiss regulations for the delivery of milk.

The tax due under Art. 1 of the Order of April 23, 1937, regulating the collection of taxes on liquid milk, was raised from 0.5 to 2 centimes (2).

FRENCH COLONIES, PROTECTORATES AND MANDATED TERRITORIES

With a view to directing the colonial trade currents towards the mother country, a Decree-law of May 24, 1938 (3), provides that, as an exception to the basic law of April 13, 1938 regarding the colonial customs system, the French Government is empowered to impose preferential export duties on colonial products.

Certain trade agreements concluded between France and other countries contain clauses affecting various colonial agricultural products.

NORTH AFRICA

The wheat harvest reached the average in Algeria, being nearly 9 million quintals. In Tunisia, especially the northern districts, it was satisfactory. The Moroccan harvest was estimated at about 5,845,000 quintals; it was thus slightly larger than that of 1937 and substantially larger than that of 1936. The yield of soft wheat was average and the total crop was above the average, but both the yield and the total crop of hard wheat, the variety preferred by native growers, were poor. Barley, which competes with hard wheat as a native foodstuff, gave fair results in Morocco, but a mediocre outturn in Algeria and Tunisia. The Moroccan maize harvest was moderately good. While the spring drought had no serious effect on cereals, even on maize, it had serious effects on the fodder crops, and the forced slaughtering which was necessary caused a decline in livestock prices in the spring.

(1) *Recueil des lois fédérales*, No. 30 (August 31, 1938). — (2) *Ibid.*, No. 30 (August 31, 1938).
— (3) *Journal officiel*, May 24 1938.

Wine production was plentiful. In Algeria alone it was estimated at 21.5 million hectolitres, a figure exceeded only by the phenomenal production of 1934. Stocks exceed 2 million hectolitres.

The olive harvest in Tunisia was, generally speaking, mediocre.

Treaty with Great Britain regarding Morocco. — In July 1938 France concluded a treaty with Great Britain replacing the Trade and Navigation Convention of 1856. This Convention was brought to an end in July 29, 1937 by an agreement which abolished British capitulations in Morocco.

General price policy. — The general price policy tends to become less rigid. The abolition of the rule that wholesale prices may not be raised without permission applies to Algeria, together with the qualifications involved in the abolition.

Wheat. — The minimum proportion of North African hard wheat which French manufacturers are required to use in the preparation of semolina, food pastes, sea biscuits and similar products is fixed at 65 per cent. (1).

In accordance with a Dahir of July 27, 1938 (2) the embargo on exports of hard wheat from Morocco has been raised.

The Decree-law of June 17, 1938 (3) relating to the reorganization of the Wheat Office (4) applies to Algeria.

In Algeria, as in the mother-country, (5) the growers' basic price of soft wheat was fixed by the Wheat Office at 204 francs and that of hard wheat at 205 francs per quintal. There are in Algeria various taxes on wheat similar to those in France.

In Morocco the Director of Economic Affairs fixed the mill price of soft wheat at 165 francs per quintal. As this includes transport and other charges, the growers' price is lower. Wheat prices are considerably higher in Algeria than in Morocco.

With a view to regulating the competition between French and Algerian semolina manufacturers, a committee of these manufacturers has been set up on which the mother country and the colony are equally represented (6). This Committee submits to the public authorities, for their approval, any modification or innovation that may appear advisable for the protection of the semolina market, for the better organization of the trade and, above all, for the reduction of the grinding capacity of the semolina industry.

Barley. — A Dahir of July 7, 1938, authorized the export from Morocco to France and Algeria of 200,000 quintals of malting barley during the 1938-39 season. (7) This figure is the same as that given in the Decree of June 1, 1938, which fixed the quotas to be admitted free of duty into France and Algeria from the French zone of the Sherifian Empire in the period June 1, 1938 to May 31, 1939.

A Dahir of July 21, 1938, authorizes the export to France and Algeria of a quota of 200,000 quintals of common barley, subject to an export duty (8).

(1) *Journal officiel*, November 25, 1938. — (2) *Bulletin officiel du Maroc*, August 12, 1938. — (3) *Journal officiel*, June 26 1938. — (4) See the analysis under "France" in the *International Chronicle of Agriculture*, 19 September, 1938. — (5) *Journal officiel*, September 2, 1938. — (6) *Journal officiel*, June 26 and July 28, 1938. — (7) *Bulletin officiel du Maroc*, July 8, 1938. — (8) *Bulletin officiel du Maroc*, July 29, 1938.

Fodder. — The export of fodder and straw from the French zone of Morocco was temporarily prohibited by a Dahir of July 22, 1938. (1)

Wine. — By a Decree of June 17, 1938, (2) a subsidy was granted to Morocco by the mother country for the relief of the wine market. (3)

WEST AFRICA

Customs system. — According to the basic law relating to the colonial customs system, dated April 13, 1928, West Africa belongs to the so-called non-assimilated colonies, but France has undertaken to effect a gradual assimilation of West Africa with the mother country in respect of customs. A decree-law (4) was therefore issued entrusting to the central power until December 31, 1939, the responsibility of establishing customs tariffs for West Africa.

Oils. — A rebate is granted on groundnut oil exported to foreign countries, protectorates and mandated territories (5). This rebate may not exceed the export duty. It is fixed at 14 francs per 100 kilos net (6).

INDOCHINA

The general index of wholesale prices at Saigon after a steady interval during June, declined in July, August and September. There was an increase in the price of rice on the same market in August. Maize prices tended downwards while rubber after rising in June, July and August, declined in September.

The proportion of the rice exports of Indochina taken by France exceeded 50 per cent. in 1936 but fell to 43 per cent. in the following year. Nevertheless, France continues to encourage exports of this product to foreign countries. The export duty on rice was reduced.

(1) *Bulletin officiel du Maroc*, August 19, 1938. — (2) *Journal officiel*, June 29, 1938. — (3) See the measures for the relief of the Moroccan wine market, under "French Colonies" in the *International Chronicle of Agriculture*, May 1938. — (4) *Journal officiel de la République française*, May 25, 1938. — (5) For oils exported to France and Algeria and the quota of West African oils sent to these countries, see "French Colonies" in the *International Chronicle of Agriculture*, May 1938. — (6) *Journal officiel de l'Afrique occidentale française*, September 3, 1938.

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INTERNATIONAL ORGANIZATION OF THE CACAO MARKET ⁽¹⁾

SUMMARY: Production and consumption. Antwerp International Congress. Brussels International Conference. Trinidad Planters' Plan. London Monetary and Economic Conference. British Memorandum of 1934. Recent developments. Price and trade statistics for cacao.

Production and consumption.

At the beginning of the 20th century the output of cacao fluctuated around one million quintals. Almost the whole of the cacao came from the American continent, with the exception of 70,000 or 80,000 quintals from S. Thomé and about ten thousand quintals produced elsewhere.

From then on the relationship between American and African production changed in favour of the latter. In Africa there are two types of plantation: S. Thomé, representing the European type of cultivation with modern methods and large properties, and the Gold Coast, with an almost entirely native type of cultivation on a village basis and organized in small properties. In the latter area Accra cacao is grown, which is very important in international trade.

In the years 1909-1913 America's output increased to 1,450,234 quintals. The most important producing countries were Ecuador with 375,544 quintals, Brazil with 316,441, Trinidad and Tobago with 225,858, the Dominican Republic with 200,114 and Venezuela with 160,525. During the same period the African output reached 801,767 quintals, the two countries contributing most to this total being S. Thomé and the Gold Coast with 354,128 and 349,052 quintals respectively.

The margin between American and African output decreased still further during the War: compared with an American production of 1,720,112, Africa produced 1,234,298 quintals. The main contributions to this total came from the Gold Coast with 740,788 quintals, S. Thomé with 318,433 and Nigeria with 98,883 (during the period 1909-1913 the last named country only produced 33,702 quintals).

During the years 1919-1921 the relationship between the output of the two continents changed completely; while the African output reached 2,079,043 quintals (of which the Gold Coast contributed 1,470,369 and Nigeria 205,954, S. Thomé remaining at 322,440), American output was only 1,804,112 quintals.

This trend has since been accentuated. During 1927-1928 and 1931-1932 production reached 3,530,000 quintals in Africa (2,373,000 from the Gold Coast)

⁽¹⁾ *Volume préparatoire du Congrès international des fabricants de chocolat et de cacao d'Anvers.*
1930, p. 129.

and only 1,940,000 quintals in America, and in 1936-37 4,990,900 quintals were produced in Africa (2,731,000 from the Gold Coast) and 2,300,000 quintals in America ⁽¹⁾.

Several varieties of the genus *Theobroma* are known, but of these only the *Theobroma Cacao Linnaeus*, is cultivated. There are two varieties of this: the *Criollo* and the *Forastero*. The first is less productive and more delicate: it yields a high quality cacao. *Forastero* is stronger, more productive and less susceptible to disease; it yields cacao for ordinary consumption and supplies by far the greatest part of the world output.

Originally *Criollo* predominated but *Forastero* has steadily overhauled it and its output has now reached very high figures. *Accra*, which is so important in world trade, is a variety of *Forastero* ⁽²⁾.

On the international market there was generally equilibrium between the production and consumption of this product before the War, but during the War this was destroyed, chiefly on account of the fall in imports of European countries.

After the War there was a brisk recovery in demand, which later fell off somewhat. In 1925 demand again increased, reaching its highest point in 1927.

During this period prices rose, owing to natural factors and agreements between the leading business organizations of West Africa, which were endeavouring to raise prices by restricting supply.

The Accra Pool was founded as a result of these agreements. At first it enjoyed an increase in prices, but in the end end suffered heavy losses owing to reduced consumption and the necessity of placing its stocks of cacao on the market after some time, to prevent them deteriorating.

The fall in prices which had at first been caused by the disparity between consumption and a production greatly stimulated by the rise in prices between 1925 and 1928, increased with the great depression ⁽³⁾.

Antwerp International Congress.

At the International Congress of Chocolate and Cacao Manufacturers at Antwerp in 1930, a majority of countries agreed as to the desirability of setting up an international Office of chocolate and cacao manufacturers. All the principal countries gave their general support ⁽⁴⁾. Further, several members advocated that one of the functions of the Office should be an international sales campaign ⁽⁵⁾.

⁽¹⁾ *International Yearbook of Agricultural Statistics*. International Institute of Agriculture, Rome, 1919-21, p. 18; 1937-38, p. 322.

⁽²⁾ *Volume préparatoire* cited, p. 95.

⁽³⁾ Klopstock F. — *Kakao: Wandlungen in der Erzeugung und der Verwendung des Kakaos nach dem Weltkrieg*. Leipzig 1937, pp. 105-110.

⁽⁴⁾ *Compte rendu officiel du Congrès international de fabricants de chocolat et de cacao*. Antwerp, 1930, p. 113.

⁽⁵⁾ *Volume préparatoire du Congrès*, 1930 cited pp. 313, 317, 322 and 326.

The Congress approved the statutes of this Office, which was to study all questions relating to the chocolate and cacao industry, to solve problems of common interest, to suggest solutions to the national associations, and to collect and circulate all information of interest to the cacao and chocolate manufacturers and their associations. It was to ensure that its decisions were put into effect as far as possible ⁽¹⁾.

As we have said, several of the delegations recommended the launching of a publicity campaign. The representative of the Swiss Cacao Manufacturers Syndicate emphasized the need for first examining methods of collecting the annual funds for this campaign, and he pointed out that the whole amount needed by the world chocolate industry for this purpose would have to be calculated and the international distribution of advertising expenditure on chocolate goods studied. A tax of a pound sterling on each metric ton of cacao harvested in countries producing cacao beans might be levied. A contribution might also be asked from each chocolate manufacturer proportionate to his turnover, or even to the number of workers employed in his factory each year; but all such measures offered very great difficulties ⁽²⁾.

The British industrialists were not convinced of the need for the Office, but did not declare themselves against it if its role was to be merely advisory. As regards international publicity to increase consumption, that was of the greatest interest to manufacturers, but there were two great difficulties in carrying it out: (a) obtaining the necessary funds and (b) apportioning such funds. The British members pointed out that attempts to set up a national publicity pool had always failed, partly because no equitable principle for redistributing contributions could be found. The difficulties in the way of financing an international advertising campaign which the participants would be unable to supervise would be vastly greater, if not insurmountable. Advertising called for heavy expenditure and therefore large resources. Without this the plan would not give an adequate return. Nevertheless, the British members did not take any definite decision ⁽³⁾.

Brussels International Conference.

In 1932 at the request of the International Office of Chocolate and Cocoa Manufacturers at Brussels, the Belgian Government called an international conference of official delegates of countries producing cacao beans. The main object was to combat the depression from which cacao planters were suffering by establishing prices giving a normal return to the planters and traders of cacao beans. The method proposed was to create an increase in demand by an international advertising campaign in support of cacao products, while keeping the sale price of these products as low as possible.

The conference met on September 12, 13, and 14, 1932. It concluded that such a campaign was desirable, and prepared the preliminary draft of an

⁽¹⁾ *Compte rendu du Congrès de 1930* cited, p. 186.

⁽²⁾ *Volume préparatoire du Congrès international, 1930*, cited, p. 326.

⁽³⁾ *Volume préparatoire du Congrès international, 1930*, cited, p. 324.

international convention which the Belgian Government was to submit to the various States, requesting their views and proposals. The Belgian Government was then to re-summon the conference as soon as possible so that a definitive plan could be drawn up and submitted to the interested States for signature ⁽¹⁾.

In the preliminary draft the contracting parties undertook to form an international pool for organizing, subsidizing and supervising international publicity for cacao.

By international publicity was understood (1) all measures aimed at developing the use of products based on cacao (publicity in the strict sense); and (2) all technical and scientific research to improve cacao growing.

The international publicity fund is to be formed by levying a uniform payment on all cacao beans on leaving the signatory countries producing them. This payment was to be levied by the customs offices and be equivalent to one gold pound sterling per metric ton of exported cacao beans. The levy was to be paid either by the planters separately, or by various intermediaries, before permission to export could be obtained. It might be paid by means of six months bills whose issue would be governed by special regulations.

This rule was made to prevent the charge falling on the planter, as the exporter might be tempted to lower the price paid to the planter by the amount of the levy. The exporter might be afraid of not recovering the amount of the levy or of having to advance it over a considerable period before recovering it. Under the rule adopted the exporter would be authorized to pay the levy before exportation, by means of six months bills. It would be invoiced separately by the various exporters and intermediaries in such a way that its incidence fell on the manufacturers of products based on cacao. The exporter, therefore, would not in fact pay the levy until he had realized the price of the cacao plus the amount of the levy. Thus, as the exporter as a rule gets paid after three months at the latest, and very frequently at the time of shipment, it can be said as a general rule that the exporter would on an average also gain three months interest on the amount of the levy.

The draft plan added that when one of the signatory countries producing cacao beans had factories manufacturing cacao beans on its own territory, the competent authorities would levy the payment on the same basis before the cacao beans might be manufactured in these factories.

The levies paid to the International Office would form the International Publicity Fund administered and directed by the International Office on its responsibility and under the supervision of the contracting States.

The funds at disposal each year would be distributed as follows:—

A. — Subvention for publicity properly so called in the different countries according to the possibilities of developing the use of products based on cacao, whether or not these countries were manufacturers of products based on cacao.

1. The share of this payment received by countries possessing such industries would be based mainly on national consumption for the preceding

(1) Conférence internationale du cacao. *Compte rendu officiel*. Brussels 1932, pp. 7, 147 and 155.

year. These sums would be calculated on the basis of copies of official statistics, certified by the competent authorities of the country as conforming to the originals and indicating:— (a) The quantities of cacao beans produced, imported, exported, re-exported, put in stock, taken out of stock or entering the country in transit, during the preceding year; (b) The quantities of different types of products based on cacao or derived from cacao beans which have been imported, exported, re-exported, put in stock or entering the country in transit, during the preceding year.

2. The share of countries not producing products based on cacao would be a percentage fixed by the International Office on the basis of the probable consumption in these countries.

B. — Reserve Fund for the International Office to organize and administer, or subsidize, technical and scientific research of general interest.

C. — Reserve Fund for general organization, administration and supervision of publicity by the International Office.

The International Office would be authorized to deduct annually 10 per cent. of the funds for publicity, with the object of organizing and administering, or of subsidizing, technical and scientific research of general interest aimed at improving cacao growing.

If a national association of cacao planters considered that it was not worth while to devote any part of the resources at disposal to technical and scientific research affecting it or the colonies of the countries in which it was established, that association's share will be increased by the proportionate sum which had not been allotted to technical and scientific research. The International Office would, however, first ask the opinion of the Government concerned.

The International Office would be responsible for the organization, administration and supervision of publicity, and decide as to its general lines.

The Belgian Government submitted the results of the Conference for consideration by the Governments concerned.

In a note published in May 1933 the British Government, whose colonies export a large part of the world output, raised several objections against the plan in question and suggested that in any case the moment had been badly chosen for conducting an international publicity campaign chiefly on account of the monetary restrictions in force and in general of the limitations on international trade⁽¹⁾.

After this, the idea of carrying out the scheme in question was abandoned.

Trinidad Planters' Plan.

Another attempt at international action to improve the cacao position began early in 1933.

The Trinidad planters put forward a plan for regulating the cacao market. The Trinidad Chamber of Commerce submitted this to the British Colonial Secre-

(1) Klopstock, *op. cit.*, p. 128.

tary with a view to promoting a conference of representatives from the producing countries to consider the plan. With the aim of raising prices of Accra to some specified level, this conference, which is usually known as "Z", sought to induce the Governments of producing countries to build up stocks from part of the surplus output. The stocks, which would be placed to the account of an organization created by the conference, would be drawn upon by the Governments when prices rose above the basic level. This plan was not carried out, but it led to an investigation of the subject by the London Monetary and Economic Conference and by the British Government ⁽¹⁾.

London Monetary and Economic Conference.

The sub-committee of the London Monetary and Economic Conference, which was instructed to study the co-ordination, production and sale of cacao, submitted a report which was approved by the conference. In its report the sub-committee suggested that the position of the cacao market should be properly studied after the conference, account being taken of present production and consumption and existing stocks of various qualities. The sub-committee invited the countries most interested in cacao production to consider the matter and as soon as possible to submit to the General Secretary of the Conference their remarks and proposal as to the convening of a meeting of experts to study the organization of the production and international trade in raw cacao ⁽²⁾.

British Memorandum of 1934.

In 1934 after consulting the Governments of the colonies interested and the representatives of the cacao trade and industry in the United Kingdom, the British Government drew up a memorandum making use of a report which it had submitted to the London Conference. This very interesting memorandum begins by sketching the development of the production and consumption of cacao over a period of many years, and proceeds to point out the dangers of the situation for the future. The memorandum shows that prices have fallen to very low levels for Accra, about a third in terms of sterling and a quarter in terms of gold, of the prices ruling immediately before the War. It attributes this fall in part to the general fall in prices and in part to the size of the stocks held.

Stocks in consuming countries plus quantities afloat at the end of September were 160,000 metric tons in 1926, 218,000 in 1927, 205,300 in 1928,

⁽¹⁾ For further information see Klopstock, *op. cit.*, p. 121.

⁽²⁾ *Rapports approuvés par la Conférence*. July 27, 1933, League of Nations. London Monetary and Economic Conference C. 435 M. 220 1933 II.

223,700 in 1929, 239,800 in 1930, 222,300 in 1931, 232,700 in 1932 and 310,000 in 1933.

The British Government considers that the first step away from this position and towards a rise in prices is more co-operation between the cacao sellers, with a view to an agreement on selling prices. Sellers generally act independently, and their position is much weaker than that of buyers. The latter, apart from a limited number of small buyers, are represented by a few large manufacturing concerns who as a rule hold large stocks and who are therefore in a position to hold off the market for a substantial period.

One of the objects of a sellers' agreement should be to fix a basic price. As Accra is the most important grade of cacao, and as the prices of other cacaos depend to a large extent on the prices of Accra at Liverpool, the agreement should base prices on that of Accra.

At the same time the British Government expressed the view that any very great increase in prices would not be of general advantage, since it would limit consumption and stimulate production in West Africa.

As regards the proposal for active co-operation between producers in different countries, the memorandum suggested that this would be facilitated by forming a small international organization to look after production and, with the assistance of the principal consuming countries, consumption. The function of this body would be to watch closely increases in production and stocks and the course of prices, to advise the Governments concerned if there were indications that production was at an excessive rate and to discuss measures for rectifying the situation. It might also conveniently collect information regarding customs tariffs in the consuming countries, import prohibitions and restrictions and all measures tending to reduce the consumption of cacao. Thus producing countries would be in position to decide whether it was desirable to make representations to consuming countries with undue restrictions.

If the measures proposed were not adequate to ensure reasonably remunerative and stable market prices, the British Government thought that the growers themselves—if well enough organized—or the governments concerned, might be asked to form a joint fund for holding stocks off the market until they could be absorbed. This fund would be financed by a levy on cacao exports. Naturally there would be an element of speculation in operating this fund, unless there were some assurance that future production would be kept down to a figure allowing for the absorption of surplus stocks within a reasonable period. The British Government would be very reluctant to invite British producers to subscribe for such a purpose if it did not receive a formal assurance that all countries in which an increased output is possible had undertaken to limit production in accordance with an agreed programme over a period of years (¹).

(¹) Gordian, "Periodical devoted to the cultivation, trade in and manufacture of cocoa, sugar and related products". Hamburg. March 12, 1934, p. 20.

As a result of the memorandum the calling of a conference was considered to discuss the question of the cocoa market, but although it was announced several times as about to take place, it has not met so far ⁽¹⁾.

Meanwhile, the prices of this product, which had stayed at a low level during 1933 and 1934, showed a distinct rise during 1936 and up to the beginning of 1937. *Accra* which was quoted in London at 23/8 (yearly average) per 112 pounds (50,802 Kg.) in 1933, 22/10 in 1934 and 23/3 in 1935, rose progressively in 1936 from 23/6 in January to 28/- in June, to 33/7 in September, to 50/7 in December, to 55/7 in January 1937, to fall again after the general recession to about 35/- in June and September and to 25/7 in December ⁽²⁾.

Recent developments.

The 1937-38 season opened with the formation of a Buying Cartel of the principal European exporters of West African cocoa. The Gold Coast planters at once opposed it by boycotting sales ⁽³⁾.

The agreement between exporters was suspended from April to October, the date which had been fixed for publishing the report of a commission of inquiry, appointed by the British Colonial Secretary, on the position of the cocoa market in West Africa ⁽⁴⁾.

At the same time, the planters' boycott ended, having lasted about six months, and the exportation of cacao from the Gold Coast was controlled by export permits. At the end of the season this system ceased too.

Despite the sellers' boycott and the system of export permits, the movement of prices in 1938 was not favourable. For *Accra*, the season opened with a price of about 30/- per cwt. in April; when boycotting ceased it fell to 25/- and by the end of May to 18/-. It then recovered somewhat and reached from 23/- to 25/- during the last three months of the season ⁽⁵⁾.

The British Commission of Inquiry which has just published its report on the cacao position in West Africa denies that buyers caused the fall in cacao prices by the agreement which we have just mentioned; this fall coincided with a general depression of prices on the world markets. It recognizes, however, that such an organization lays itself open to accusations of this kind.

The Commission proposes a fresh solution. The agreement between the buyers should be broken off, but producers should be organized on the model of the British Agricultural Marketing Boards. The Commission also expressed the view that West Africa alone could raise world prices only very little. The possibilities of a world agreement must therefore be studied ⁽⁶⁾.

⁽¹⁾ Gordian, February 25, 1935, p. 16.

⁽²⁾ *International Yearbook of Agricultural Statistics* cited, 1937-38, p. 833.

⁽³⁾ *Neue Zürcher Zeitung*, October 27, 1938.

⁽⁴⁾ *The Economist*, April 30, 1938.

⁽⁵⁾ *Neue Zürcher Zeitung*, October 27, 1938.

⁽⁶⁾ *The Economist*, October 29, 1938.

Price and trade statistics for cocoa.

Below is shown the movement of average prices over the years 1913-37 for Accra f. f. in London (spot, including import duties) in shillings per cwt. (50.802 kg.) (1).

1913	59/11	1931	24/8
1925	45/8	1932	26/9
1926	52/10	1933	23/8
1927	72/9	1934	22/10
1928	61/2	1935	23/3
1929	47/10	1936	31/0
1930	38/1	1937	38/11

The following table shows quantities imported and exported on the different continents during the periods 1909-13, 1923-27, 1927-31 and during the year 1936:—

Exports and imports by continents from 1909 to 1936:

Yearly average in quintals.

	1909-1913 (1)		1923-1927 (2)	
	exports	imports	exports	imports
Europe	263,000	1,864,000	206,000	2,864,000
U. S. S. R.	—	41,022	—	23,927
North and Central America	363,000	640,000	463,000	1,925,000
South America	1,097,000	57,000	1,415,000	104,000
Asia	60,000	17,000	50,000	22,000
Africa	817,000	2,000	3,052,000	4,000
Oceania	9,000	7,000	34,000	58,000
	2,609,000	2,628,000	5,220,000	5,001,000

	1927-1931 (3)		1936 (3)	
	exports	imports	exports	imports
Europe	129,000	3,041,000	85,000	3,963,000
U. S. S. R.	—	40,400	—	70,600
North and Central America	489,000	2,001,000	376,000	3,032,000
South America	1,391,000	144,000	1,752,000	160,000
Asia	54,000	28,000	47,000	34,000
Africa	3,396,000	8,000	5,079,000	12,000
Oceania	32,000	50,000	22,000	81,000
	5,491,000	5,312,000	7,361,000	7,353,000

(1) *International Yearbook of Agricultural Statistics*, 1930-31, p. 373. — (2) *International Yearbook of Agricultural Statistics*, 1931-32, p. 379. — (3) *International Yearbook of Agricultural Statistics*, 1937-38, p. 542.

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(1) Figures taken from *International Yearbook of Agricultural Statistics*, volumes for 1928-29, 1932-33 and 1937-38.

LAND SETTLEMENT IN FINLAND ⁽¹⁾

SUMMARY:— Position before settlement. — Land settlement organizations. — Problem of tenant farming. — Problem of the landless farm labourer. — Settlement on State lands. — Loans for dwellings. — Farming of new lands. — Preserving the settlements. — Results of land settlement.

Position before settlement.

As a result of social developments in the 19th Century, farmland in Finland was badly distributed at the opening of the 20th Century, and the State took measures to alter this position in favour of the agricultural proletariat. Thus internal land settlement began in 1900.

As in most of Europe, the population increased fairly rapidly, rising from 1.1 million in 1815 to 3.3 millions in 1915, that is threefold. Owing to the land system, however, the number of properties did not increase at the same rate, so that the increase in population resulted in larger numbers of tenant-farmers and agricultural workers.

In 1901 there were 33 million hectares of agricultural land, of which 13.1 million hectares belonged to the State, 0.4 millions to communes and parishes, 17.3 millions to owner farmers and 1.2 millions to persons not engaged in agriculture. Subtracting the State lands from the total area, 19.9 million hectares remained, 8.7 of which were occupied by properties of less than 250 hectares, the rest having properties of over 250 hectares.

In the same year the number of rural families was 478,100 of which only 110,600 (23.1 per cent.) had full ownership of their land. About 160,500 (33.6 per cent.) rented their land or held it in *métayage* and 207,000 (43.3 per cent.) had no rights in the land at all. Of the farmers and *métayers* 100,700 owned less than 3 hectares. These figures include forest and uncultivated land as well as cultivated lands. The rural population was then 2,171,000 of which 1,547,000 (71.2 per cent.) lived by agriculture. Of this farm population, which needed land more than any other class, 604,000 persons (39 per cent.) were owner farmers, 352,000 (22.8 per cent.) were tenant farmers and 591,000 (38.2 per cent.) were farm labourers.

State intervention was therefore needed to improve the lot of both tenant farmers and labourers. Land settlement would solve the problems of tenant farming and *métayage* and enable agricultural workers to acquire land, and also assist small farmers and agricultural labourers to erect buildings on their lands.

⁽¹⁾ Report supplied to the International Institute of Agriculture by the Finnish Ministry of Agriculture.

Land settlement organizations.

There was no official organization in Finland dealing specifically with land settlement until 1906, when the post of land settlement inspector was created. The inspector dealt with all matters relating to land settlement, which included supervising the work of the communes in this respect. In 1918 a central organization was set up for the general administration of land settlement, forming an independent section of the Ministry of Agriculture. It was completely reorganized at the beginning of 1938 under the name of Land Settlements Department of the Ministry of Agriculture, all operations relating to land settlement being centralized with it.

This department supervises the work of the land settlement inspectors, each of whom is allotted a settlement district. The country is at present divided into twenty such districts. The rural communes have supported the work from the outset, and since 1919 each has had a land settlements committee. Half of the committee members must be tenants or owners of farms formed for land settlement. The work of these committees is extremely useful. They assist and give advice to farmers who do not own their land, help and supervise the settlers and furnish the competent authorities with their knowledge of local conditions. The land settlement inspector gives advice to the committee of his district and supervises its work, while he also advises and assists the settlers. He also carries out the instructions of the Land Settlements Department of the Ministry of Agriculture. For example he surveys lands to be bought for settlement and draws up plans for settlement.

In addition to these permanent organizations, there are *ad hoc* settlement commissions to carry out the settlement plan for State or expropriated lands. The composition of the *ad hoc* commission is decided by agreement between the surveying and land settlement authorities, forest services and the land settlement committee of the commune concerned.

Problem of tenant farming.

The system of tenant farming goes back to the 18th Century in Finland, but it did not become important until the 19th Century. The tenant farms formed part of an estate, so that one estate might contain several farms. The lands rented consisted of cultivated lands varying in area from 3 to 10 hectares or dwellings with generally less than one hectare of cultivated land. The tenant farmers had several matters of complaint, the chief being their close dependence on the landowner and the resulting instability of their position. In 45 per cent. of the cases leases were verbal or else easily terminable.

The first improvement in the position of tenant farmers was introduced with the law of 1902 and the decree of 1909, by which all leases had to be sanctioned in writing and stand for a period of from 25 to 100 years. The laws also provided that at the expiration of the lease farmers should be compensated for improvements carried out.

The problem of leaseholds was not completely settled, however, and it was becoming a difficult social question which could apparently only be finally solved by transforming the tenant farmers into small landowners. This was done shortly after the Great War.

In 1918 a law was passed by which farms leased from private owners might be converted into small properties. Subsequent laws gave similar treatment to farms leased from parishes and the State. These laws gave farmers the right to purchase the land which they occupied, the price payable being less than that ruling before the War. The farmer might, if he desired, act through the State. In this case, the State paid the landowner by means of bonds and the State was repaid by the buyer in yearly payments of 6 per cent. for farms and 8 per cent. for pieces of land with a dwelling, including interest at 5 per cent. In 1936 the rate of interest was lowered by law to 3 per cent.

Tens of thousands of farmers became landowners as a result of this legislation. By the end of 1936, 65,698 farms had been acquired with full ownership by their farmers and 54,885 pieces of land with dwellings had been acquired by their occupiers. Almost all tenants have become landowners.

Problem of the landless farm labourer.

Private and State lands have been used to provide land for agricultural workers.

There are two possible procedures for settlement on private lands. The settler may borrow privately with a view to acquiring land considered suitable for settlement by the authorities. Or the State may buy land, draw up a plan for settling it and then sell the farms created in accordance with this plan. So far the former type of sale has been used most, though in the last few years the State has bought more land for settlement than before. It should be noted that expropriation as allowed by the land settlements law of 1922 has been used very little. The new land settlements law of 1936 also contains regulations for expropriating parish and commune lands and land belonging to companies and persons trading in wood. Ordinary estates belonging to individuals may also be expropriated if the small farms created before 1936 need enlarging. It is still too early to judge how far these regulations will be applied.

Settlement on private property is carried out with the help of a public land settlement fund which was formed in 1898 and reorganized in 1920 and which is financed from credits granted by the State. By the end of 1937 it had funds amounting to 603.2 Finnish marks, 513.6 millions of which were funds proper and 55 millions loans from the State. These funds are used almost exclusively for loans to the land settlement offices of the communes, which guarantee to repay the loans. These land settlement offices, which are administered by the committee of the commune, then lend to the settlers. The final decision regarding requests for loans rests with the Land Settlements Department of the Ministry of Agriculture. The loan offices may grant loans up to 50,000 Finnish marks for the purchase of land, or for the repurchase by one inheritor of the

shares of his co-inheritors in small properties. The latter loans are regulated by the 1936 law and were first granted in 1938. As will be shown below, the loan offices may also grant loans for building and improvement work.

Loans for the purchase of land and for the repurchase of shares in inheritances are repayable by yearly installments of 4 per cent. and 5 per cent. respectively, including interest at 3 per cent.

At the beginning of 1938 there were loan offices for land settlement in 506, *i. e.* nearly all, rural communes. By the end of 1937 the land settlement fund had granted to landless individuals 15,029 loans to acquire cultivable lands of from 15 to 40 hectares; 10,215 for land for settlement, of from 1 to 2 hectares, and 19,528 to enlarge farms and lands for settlement; the total amounting to 247.5 million Finnish marks. The land settlement fund has granted loans to certain land settlement co-operative organizations and communes for the purchase of land, though there has been very little settlement by these means.

By the end of 1937 the State had bought 222,600 hectares of land for settlement. Plans for settling land bought in this way are drafted and in some cases the holdings thus formed are cleared or built upon before they are handed over to the settlers. This work helped to relieve the unemployed during the depression. The purchase price of these farms is repaid to the State on the same conditions as loans for settlement. By the end of 1937, 4,081 farms and 1,037 settlement had been formed on lands bought by the State; and 1,199 pieces of land had been sold to enable small landowners to enlarge their holdings. In all the State had dealt with a total of 208,116 hectares. Woodlands not needed for farms remain part of the State lands.

Settlement on State Lands.

Woodlands, estates of Government officials and other State lands are also liable to be used for land settlement.

In Finland the State owns nearly 13 million hectares of forests, amounting to about 37 per cent. of the nation's territory, the majority lying in the North and East. Naturally some of these forest lands are suitable for settlement. The land may be allotted for cultivation either at the suggestion of the interested parties, who select the land desired and have it approved by the Government, or at the suggestion of the Government, which may plan the creation of a whole group of farms. In the latter case the State frequently carries out some of the preliminary work, such as draining marshes and laying down roads. For some years it has also erected necessary buildings and even cleared fields before selling them to the settlers. By these means 2,062 pieces of State lands had been allotted for cultivation and 767 for building houses by the end of 1937, while 550 pieces had been sold to small landowners to enable them to enlarge their holdings.

Estates of Government officials, numbering nearly 900, covered about 270,000 hectares. The majority of these estates were military residences which had been set up in the 17th Century and the usufruct of which afforded officers their

remuneration, in accordance with the military system of the time. Their original purpose having disappeared these estates were for several decades farmed by tenants. The process of dividing them up and leasing the pieces was begun in 1915. By a law of 1926 the pieces could be ceded with full ownership. When the leases ran out the Government drew up a plan for settling the land which provided for the creation of farms and the dividing up of land for dwellings. Such land was sold separately from the residence which was sold in its turn with the land immediately surrounding it. The State conserved the forests as they were not needed for the new farms. By these means 931 farms had been formed and 649 pieces of land divided up for dwellings by the end of 1937, while 861 pieces had been sold to enlarge small holdings and to add to dwellings with insufficient land.

Of State lands not forming part of the forests or belonging to residences of officials, very little has been used for land settlement.

The repayment of the cost of land coming from the State lands is regulated in the same way as that for other settlement lands.

Loans for dwellings.

The loan offices for land settlement lend to small land-owners and agricultural labourers for building purposes. From 1922 the State also granted credits to the rural working population specifically for building purposes. In 1937 a special loan office was set up which was in 1938 merged into the land settlement fund ⁽¹⁾.

This amalgamation resulted in the credits for working class dwellings being granted through the land settlement loan offices of the communes. By the land settlements law of 1936 these offices may grant credits of up to 25,000 Finnish marks for building on farms and up to 15,000 Finnish marks for building on land allotted almost exclusively for the construction of dwellings. The loan may not exceed 75 per cent. of the expected cost of construction if the house is built on the borrower's own land, and 50 per cent. of the cost if built on leased land. The borrower must have his building plans approved by the land settlement authorities and the latter may in some circumstances supply model plans. The building loans are repayable in annual instalments of 5 per cent., including interest at 3 per cent.

By the end of 1937, 356.2 million marks divided between 53,202 loans had been granted for building purposes. About half of these loans were granted to small farmers, the other half to agricultural workers.

⁽¹⁾ A similar loan office contributes towards the construction of small family dwellings in towns, villages, etc., but it does not come under the aegis of the land settlement authorities.

Farming of new lands.

A large part of the lands for settlement were uncultivated, though on the majority of farms, it is true, some of the land was cleared and even necessary buildings built before the land was handed over to the new owner. But generally the new owner had to start at once preparing fields and buildings. To do this he could obtain a moratorium of not more than ten years on his annual payments to the State and to the loan office for land settlement on condition that the proposed improvements were carried out. A moratorium of ten years is granted to all settlers on farms formed out of the State forests.

As was said above, settlers can obtain credits for building by means of the loan offices for land settlement. These also grant loans for clearing and improving arable and pasture lands. By the end of 1937, 21 million marks had been distributed between 8,403 loans in this class. The conditions of repayment are the same as for building credits.

For some years, bounties for breaking up and cultivating new land have been given and these are generally used to pay off loans made to the settlers by the State. In 1937 and 1938 the State tried the experiment of granting interest free loans to enable settlers to buy equipment.

The authorities also watch over the development of the settlers into good farmers, and a special system of instruction has been worked out, in which an important part is played by instructors. The instructors are allotted an area by the land settlement authorities and must give instruction to certain settlers in the area indicated by the authorities, the cost being paid by the State. The course lasts for from one to ten years according to circumstances. Having examined the existing position and possibilities of the holding, the instructor works out a general scheme, plans for the yearly work of the farm and, if necessary, plans for clearing the land and for building. In 1938 about 5,400 holdings enjoyed this practical instruction.

Preserving the settlements.

There was much discussion at the beginning of the century as to how to keep settlement farms in the hands of the settlers. The question was whether it was better to grant the land in hereditary emphytheusis or freehold. Emphytheusis has not been used in Finland for internal settlement, but for some time a tenant system has been used by which the lease is automatically converted into freehold when the sum of rent payments reaches the value of the property, including the interest on this value. Direct sale has already taken the place of this system, except with farms where the State has had to perform the clearing and building. In these last cases, the farms are generally given to candidates for a probationary period of not more than 10 years, and they do not acquire the property until after this probationary period.

Although land settlement farms are held in freehold, it was considered desirable to restrict this freehold in the interests of land settlement, and to

this end the 1936 law specified that the settler might not sell his land to a person already owning land without the permission of the land settlement authorities and he may not leave or partition it. Nor could he sell woodlands in his holding without permission. Infringement of these rules would make him liable for repayment of the State's loans, plus a fine. Settlement farms remain under these restrictions for 20 years, and over this period the farms are kept on a register at the Land Settlements Department of the Ministry of Agriculture. These regulations only affect farms proper and land to extend ground for housing purposes, though the ground itself does not come under the regulations.

Results of land settlement.

The following figures show the results of land settlement up to the end of 1937 :—

Class of land	Number of new farms	Number of new small farms with dwellings	Total	Area in hectares
Bought by private agreement and by means of credits for land settlement	15,421	10,215	25,636	556,011
Bought by the State	4,081	1,037	5,118	208,166
Acquired by rural communes and land settlement co-operative unions with the help of credits from the State	576	101	677	17,011
Land from State property	3,079	1,439	4,518	240,555
	23,157	12,792	35,949	1,021,743

In addition as was shown above, 65,698 farms and 53,885 dwellings which were formerly rented have been acquired by their tenants.

An official commissions is investigating the position of small farmers in Finland, though its report on the effects of land settlement has not yet been published. But at least it is known that the majority of tenant farmers whom the State has enabled to buy land on advantageous terms have become prosperous small landowners.

Nevertheless, a large number of settlers had great initial difficulties. However, these were overcome by the moratoria on annual payments, and in some cases by reductions on the sale price. Very few of the settlers have been reduced to a forced sale of their land.

There has been a great change in the social and economic condition of the rural population since the beginning of the century, and especially since the Great War. The total number of persons living by agriculture has hardly increased, for labour has been attracted by the great developments in other branches

of the economy. On the other hand, the relationship between the different groups forming the agricultural population has been greatly altered:

Agricultural Population	1901	1910	1930
Owner farmers	604,000 (39.9 %)	748,000 (39.1 %)	1,238,000 (62.9 %)
Tenant farmers	352,000 (22.8 %)	383,000 (20.0 %)	112,000 (5.7 %)
Agricultural labourers	591,000 (38.2 %)	781,000 (40.9 %)	617,000 (31.1 %)
Total	1,547,000 (100 %)	1,912,000 (100 %)	1,967,000 (100 %)

Thus the percentage of the population farming its own lands has risen between 1901 and 1930 from 39.1 per cent. to 62.9 per cent. of the total population living by agriculture. This change, which is in the main the result of land settlement, has led to a considerable improvement in the social condition of the peasants.

INTERNATIONAL CHRONICLE OF AGRICULTURE

BELGIUM

General price policy.

In 1938 the position of agriculture again became critical after the improvement recorded during the years 1935-1937. The Belgian *Boerenbond* agricultural index number shows that the margin between selling prices and the cost of production of agricultural products is still very considerable:

	Selling Price Index	Cost of Production Index	Margin Index
	1909-1914 = 100		
1935	502	630	128
1936	555	689	134
1937	604	736	132
1938 March	612	758	146
April	611	760	149
May	653	767	114
June	662	767	105
July	632	766	134
August	631	754	123
September	641	748	107
October	656	748	92
November	650	744	94
December	646	751	105

This situation led the *Alliance Agricole Belge*, a union of Walloon farmers, horticulturists and small stock farmers to make clear to the public authorities at its recent general assembly the great importance of the following recommendations (1):

1. The re-establishment of a normal balance between arable and stock farming especially by an adequate and stable "revalorization" of all cereals with a view to extending the area under crops and so avoiding a dangerous over-production of dairy and animal products.
2. Reduction of the often excessive margin between the price paid to producers and that charged to consumers.
3. Reserving the home market for Belgian products and improving its organization.
4. Use of Belgian agricultural products by all Government and public institutions.
5. A revision of trade agreements in the interests of agriculture.

The economic position of Belgian agriculture depends in part upon the possibilities of selling the surplus production of certain branches abroad, so that all official circles are concentrating their attention upon the problem of exporting agricultural produce.

In May 1938, in reply to these recommendations, the Government reaffirmed its statement of June 1936, expressing its intention of protecting the home market and of pursuing a policy of reducing cost prices and organizing the farmers. Everything possible will be done to improve farming equipment and to guarantee a profit margin to the farmers.

It was recognized that the Government would first of all have to be supplied with information about the agriculture, industry and trade of the country before deciding on the financial, economic and social measures for carrying out this programme. On November 16, 1938 (2), therefore, a Royal Decree ordered the Central Statistical Office to prepare statistics of the various branches of production and trade in Belgium.

In addition, a Royal Decree of August 26, 1938 (3) set up a Ministerial Committee for economic co-ordination. The Committee whose views are submitted to the Council of Ministers is to study in particular such matters as measures to meet the crisis, the utilization of labour, tendencies of the whole of the national economy or certain of its branches, market equilibrium at home and abroad and the effects of social, fiscal and transport policy upon production and trade.

By a Royal Decree of August 13, 1938 (4) regional and national commissions composed of representatives of producers and traders in farm and garden produce have also been set up, to decide on the standard prices to be paid to producers. They will take account of the condition of the market, costs of production and, where necessary, the cost of transport.

Cereals.

Expectations of very good crops in wheat producing countries caused a heavy fall in the prices of cereals. From January to October 1938 on the principal Belgian markets they fell, on the average from 134.21 francs per quintal to 111.41 francs for wheat; from

(1) *Alliance Agricole Belge*, No. 40. Brussels, October, 1, 1938. — (2) *Moniteur Belge*, No. 323, November 19, 1938. — (3) *Moniteur Belge*, No. 251, September 8, 1938. — (4) *Moniteur Belge*, No. 230, August 18, 1938.

117.28 to 64.43 for rye; from 114.73 to 77.40 for oats; from 116.92 to 75.13 for winter barley.

The position is critical because world prices represent only from 50 to 65 per cent. of cost prices, and because about a third of Belgium's farm lands are under these crops.

In accordance with its programme, the Government has therefore decided to proceed with the "valorization" of cereals, which is considered indispensable to agricultural equilibrium; the policy employed from 1932 to 1935 and then abandoned was again introduced in 1938. The funds for valorization are obtained from a tax on import licences. By a Royal Decree of July 19, 1938 imports of wheat were subjected to a special duty of 10 francs per quintal which was first raised to 20 francs (Royal Decree of September 14, 1938) and then to 22 francs (Royal Decree of December 26, 1938) ⁽¹⁾. With the exception of oats, which is regulated separately, valorization applies to all cereals, including rye, barley, spelt and meslin.

A special commission consisting of agricultural and industrial representatives, economists and Government officials is to study the cereals problem as a whole.

Dairy produce.

In recent years the Government has paid special attention to milk. In our last Chronicle dealing with Belgium ⁽²⁾ we described the Government's plan for dealing with this question. This plan is now being put into operation.

In recent months the economic position of milk production and the milk industry has not been satisfactory. The price of milk products has fallen; butter from 25.20 francs in March 1938 to 23.50 in April and 21.60 francs in May. It might have been thought that less milk would have been marketed than in the preceding year owing to the epidemic of foot and mouth disease, but this was not in fact so.

Margarine and food fats were strong competitors to butter.

Dairies and merchants helped to ease the market somewhat by withdrawing for winter consumption more than 3 million kilograms of butter during the period of high output.

The Ministry of Agriculture prohibited all imports of butter and limited monthly quotas for manufacturing coloured margarine to a strict minimum.

The "National Office for Milk and its Derivatives" has assumed the supervision of butter, compulsory and optional, which the Ministry decreed on April 30, 1938. It aims at ensuring the production and consumption of a butter guaranteed as to quality. Any dairy or butter factory desiring to use the official mark must have been approved by the Ministry of Agriculture. The milk department of the Ministry prepares a report on the dairy or factory ascertaining in particular whether pasteurization is adequate, whether refrigeration equipment is satisfactory and whether the water can be declared pure after chemical and bacteriological analysis. The actual supervision is carried out under the auspices of the National Office for Milk and is conducted by means of frequent tests and analyses of butter. When several tests have given satisfactory results, the official mark is stamped on the butter of the approved dairy or factory.

On September 24, 1938 a ministerial decree ⁽³⁾ dealt with the supervision, compulsory and optional, of condensed milk.

⁽¹⁾ *Moniteur Belge*, No. 365, December 31, 1938. — ⁽²⁾ April 1938 number of this Bulletin. —

⁽³⁾ *Moniteur Belge*, No. 230, August 18, 1938.

Further, three royal decrees dated August 13, 1938 ⁽¹⁾ were issued, which aimed at offsetting seasonal fluctuations in the milk market. The first grants subsidies to manufacturers of whole milk powder, thus enabling 5 million litres of milk to be withdrawn from the market. The second subsidizes the production of condensed milk, allowing from 4 to 5 million litres of milk to be taken from the market. The third subsidizes the production of cheese. All these subsidies are intended to support a new industry which will absorb a large quantity of milk from the market during times of over-production.

The use of the words, butter, cream, milk cheese, is regulated by the Decree of August 13, 1938 ⁽²⁾ which attempts to stop the use of trade marks for certain goods which show the names of milk products not really contained in the goods.

Meat.

Beef and veal. — During recent months the position of the beef and veal market has been unsatisfactory, but there is not much scope for intervention in this field. In trade agreements with Denmark and Ireland in 1934, formal arrangements were made for the import of cattle. Improvement in the beef and veal market depends largely upon the possibilities of altering existing agreements. As occasion arises the Government endeavours to adapt these agreements so that cattle-breeding may be protected.

There were negotiations with the Danish Government for a provisional arrangement after imports of cattle into Belgium had been suspended owing to foot-and-mouth disease. On September 22, 1938 a provisional arrangement was signed by which it was agreed that the Belgian Government should concede Denmark a beef quota. Such imports would be sold on the open market in Belgium. Meanwhile it was pointed out to the Belgian stock farmers that home production would soon meet all the needs of the home market and that it should not therefore be increased too much.

Pigmeat. — In contrast to beef, the market for pig products was very satisfactory in 1938. A rise in the price of pork followed the low prices of 1937 as was to be expected from the course of the pig cycle. The depression in pig production was lessened by Government measures to encourage exports, the value of exports of fresh pig-meat, salted fat pork and lard to Germany reaching nearly 12 million francs in 1937.

The spread of foot-and-mouth disease affected the cyclical rise in pig prices.

Agriculture and paid holidays.

A royal decree of July 15, 1938 ⁽³⁾ fixed the special methods of applying the law of July 8, 1936 relating to holidays with pay to farm, horticultural and forest workers. These branches of production are regulated as follows:

1. Permanent employees may claim one day's paid holiday for each consecutive month of work with the same employer.

2. The holiday must be taken during the year in which the work is performed; by agreement with the employer the worker may take all or part of his holiday during the first three months of the following year.

⁽¹⁾ *Moniteur Belge*, No. 292, October 19, 1938. — ⁽²⁾ *Moniteur Belge*, No. 230, August 18, 1938.
— ⁽³⁾ *Moniteur Belge*, No. 197, July 16, 1938.

3. For each day's leave the worker is to be paid the daily wage earned at the time of leaving for the holiday, plus the money value of any payments in kind which he may receive.

4. The holiday may be taken in single days at any time during the year, provided that each holiday period of less than two days is preceded or followed by a Sunday or legal holiday.

Holidays dates are arranged by agreement between employer and worker in such a way that work is not impeded.

HUNGARY ⁽¹⁾

General situation of agriculture.

Recent international events have brought an increase of 12,000 square kilometers to the territory of Hungary. The regained territory is geographically part of the Hungarian basin, and in it—as in the rest of the country—agriculture is the predominant economic activity. To the farm lands of Hungary it has brought an increase of about two million hectares or 12.5 per cent.

The different branches of agricultural production in the regained territory are in approximately the same proportion as in the rest of the country. The area of woodlands is however relatively greater and has brought an increase of 23 per cent. to the woodlands of the country. This means that imports of wood for fuel will be reduced; imports of wood for building purposes will, however, probably increase. There are relatively fewer vineyards and meadowlands in the new territory so that the internal market for wines has been increased to some extent.

As there are considerable differences in the distribution of arable land between the various crops in the new territory, the increases in output vary greatly. Thus the output of wheat has increased by 13 per cent., rye 16 per cent., barley 23 per cent., oats 5.5 per cent., potatoes 19 per cent. and sugar-beet 50 per cent.

In general, the new territory is even more agrarian in character than the rest of the country. In many respects therefore Hungary will have a larger export surplus of agricultural products within the next few years, though the position may change in time. From the point of view of national economy as a whole the changes in the economic structure can be considered with satisfaction, since both the capacity for producing raw materials and also the internal market have increased.

The following chronicle refers to the former area of Hungary, before the recent recovery of territory.

The general economic situation was more favourable in the first six months of 1938-39 than might have been expected from the business prospects of the previous six months. This was due to the exceptionally good harvest and possibilities of export. On August 27 it was estimated (figures in parentheses showing the average for 1931-1935) that 26.2 (20.8) million quintals of wheat, 8.2 (7.2) of rye, 6.7 (6.3) of barley, 2.8 (2.7) of oats, 26.1 (18.6) of maize, 24.3 (16.8) of potatoes and 9.7 (8.9) of sugar-beet were

⁽¹⁾ Brought up to December 31, 1938.

⁽²⁾ See the *Chronicle* for July 1938.

harvested. But the yield was below the average for other products such as fruit, vegetables and wine. The yield of fruit and vegetables was small, and the harvest was delayed by unfavourable weather at the beginning of the year.

Cattle suffered very badly from foot-and-mouth disease which had, however, begun to abate at the time of this report. A relatively damp summer and the continued mildness of autumn assured good pasture up to the end of October. The autumn weather was throughout quite good and facilitated the carrying-out of farming operations.

Although the harvest was above the average, selling conditions were not unfavourable. The surplus of cereals amounted to 7 million quintals, of which 5 million have already been sold to Germany, Italy and Switzerland, though there were difficulties in marketing rye and barley. On the other hand there was no difficulty in marketing maize and potatoes, and particularly on the home market-wine. Up till the last few weeks exports of pigs were very satisfactory, whereas throughout the whole period covered by this report exports of cattle fell off, chiefly because of the catastrophic fall in the exports to Italy. Exports of eggs and poultry remained somewhat lower than in the previous year. The small surpluses of fruit and vegetables were marketed easily and at fairly good prices.

With the exception of cattle, rye and barley, prices were satisfactory, though home prices for pigs fell in December. The movement of prices and harvest led to a substantial increase in the purchasing power of the farming community, which in October was 21 per cent. above the previous quarter and 33 per cent. above October of the preceding year.

As before, the Government, sought to promote and improve sales of agricultural products. As was shown in the last chronicle ⁽¹⁾ the financial backing for the marketing scheme consists of a fund derived from different taxes, tariffs and other contributions, and is administered by the Minister of Agriculture. This fund and the marketing scheme which it finances were maintained for 1938-39 ⁽²⁾.

Labourers also benefited from the good harvest as many of them receive payment in kind. The day labourers paid in money were also better off and had more regular employment. Despite the employment of older men there was a temporary shortage of labour in many places. In the autumn a day-wage of 4 or even 5 pengös was paid to male workers. The payment of benefits for the old age insurance scheme introduced in 1938 will commence in 1939.

Market and price regulation of cereals and oilseeds.

The Government decides from year to year the extent to which futures may be dealt in on the exchange. As before, farmers were opposed to it in 1938-39 while business circles supported it and demanded the reintroduction of dealings in wheat futures. The Government kept to its former position, allowing dealings in rye and maize futures, but refusing to reintroduce dealings in wheat futures.

⁽¹⁾ See the Chronicle for July 1938, *Monthly Bulletin of Agricultural Economics and Sociology*, p. 332 *et seq.*

⁽²⁾ Government Decree (No. 4 300, M. E. 1938) to continue measures in support of agriculture: *Budapesti Zsoltöny*, No. 142, June 29, 1938.

The Ministry of Industry and Trade authorized the *Futura A. G.*, the official organization of this Ministry, which regulates the sale of cereals, wool, etc., to buy and work up sunflower seed and to sell sunflower oil. The prices of seed and oil were fixed for the whole year. Importers could obtain permits to import foreign fats only if they agreed to take a certain quantity of oil from the *Futura* at a fixed price, or else to pay into the fund for subsidizing exports a certain contribution for each quintal of fat imported. Neither permits for the import of fats nor export bonuses were granted for seed and oil not bought through the medium of the *Futura*.

Introduction of an Alcohol Monopoly.

In the last half year, the most important legislative measure relating to agriculture was the Alcohol Monopoly Law ⁽¹⁾.

Previously there had been an excise duty on alcohol and the total annual output was fixed, being divided between agricultural and industrial distilleries in the proportion of two to one. The aim of the new law is to control marketing more strictly and to shift production in favour of agriculture in general and of peasant farms in particular. The industrial distilleries either become the property of the State or continue to work for the account of the State. Large distilleries must be taken over by the State, but the operation of the smaller ones is left to the discretion of the Government. No new industrial distilleries will be allowed. In the case of agricultural distilleries the law distinguishes between private and co-operative. The latter are intended to supplement the small farms, as the private distilleries do the larger farms. Distilleries for wine and fruit form a separate group. The Government can order them to manufacture a certain percentage of their quota of spirits exclusively from wine, and to buy the wine directly from the producer at a fixed price so long as this price does not rise above certain level. In contrast to the above group, which includes the large enterprises, the small distilleries for fruit brandies are designated by the law as brandy distilleries. In these the raw materials produced on the small farms are distilled against payment in money or with part of the product. Agricultural interests are also to receive more consideration as regards refining, industrial distilleries receiving in future no licences for refining, while the agricultural distilleries may receive licences only when they are attached to a co-operative organization.

Every year at least 4 distilleries will be authorized, in the first place for farmers' co-operative organizations. If the quotas are not increased to correspond with the capacity of the new distilleries they may be re-distributed in favour of the co-operative distilleries.

The State can also distil on its own account in the so-called monopoly distilleries, and it alone has the right of importing and resale. The State also fixes the sale prices to be paid to the distilleries, graded with reference to the type of enterprise, capacity and quota, the principle being that an adequate profit should remain after total costs have been covered. The designation of a distillery as "agricultural" depends upon conformity with certain conditions. It is forbidden to lease agricultural distilleries and their location can only be shifted with special permission and under specified conditions.

⁽¹⁾ Law. A. XXX, 1938, published in the *Országos Törvénytar* of July 22, 1938. Order published in the *Budapesti Közlöny* No. 185 of August 20, 1938.

Regulation of wool marketing.

Instructions from the Ministry of Agriculture to the *Futura A. G.* mentioned above regulate the marketing of wool as follows:— the farmer delivers the wool to a prescribed warehouse where it is immediately graded. The estimated price is at once published by the *Futura*. If the producer desires to dispose of the wool at this price, he receives the purchase price immediately with a deduction of only one per cent. commission. If he wishes to postpone sale to some future, he must bear the costs of warehousing and insurance in addition to that of the commission. The farmer may also sell freely without the *Futura*, but he must then pay the commission and the costs of transfer and warehousing. Finally, the farmer may also sell the wool at the first auction, independently of the estimated price published. The system is therefore elastic, and it appears to satisfy the producer.

Regulation of trade in fuel wood.

The Government has freed trade in fuel wood from all the former restrictions, so that the powers of the Government commissioner, transport permits, and fixed prices are abolished for the year 1938-39. But to make supervision possible, wood dealers must inform the Office for Foreign Trade of all sales contracts for more than 10 metric tons ⁽¹⁾.

Regulation of wine and fruit production.

The law ⁽²⁾ on the "vine communes", and the cultivation of wine and fruit, recapitulates the existing legislation on the wine industry, but in many respects its production policy for this very important branch of Hungary's industry strikes out in quite new directions. Compulsory unions of wine-growers under the name of "vine communes" have existed for decades, but their means were too small and their powers too limited. The new law orders that henceforth in every political commune where there are not less than five owners of vineyards with not less than fifty cadestral *joch* ⁽³⁾ of vinelands, the owners must form themselves into "vine communes"; similarly for orchards. In this way such organizations will be formed in approximately every third commune, to protect plants against disease, and to promote rational methods of planting, cultivation, harvesting and marketing. To cover costs they are allowed to exact contributions similar to public taxes. The "vine communes" are grouped like "Comitats" into so called "councils of the vine communes" which must regulate the work of the separate communes for purposes of production and marketing. They also

⁽¹⁾ Order (No. 5920 M., E. 1938) on giving information about contracts in fuel wood. Published in the *Budapesti Közlöny* No. 188 of August 25 1938.

⁽²⁾ Law on the vine communes and wine and fruit cultivation. Published in the *Országos Törvénytár* of August 2, 1938.

⁽³⁾ *Joch* = 1 $\frac{1}{4}$ English acres approximately.

serve as executive organizations for the Minister of Agriculture as regards wine and fruit. The work is looked after by the secretary of the council, who must have had specialised training in the subject.

The second part of the law contains regulations for wine and fruit production. The law forbids the planting of new vineyards for three years. When this prohibition—which in certain cases may be extended for a further three years—lapses, planting is only allowed on suitable sandy soil or on suitable mountain land. In any case, no one owner may plant more than two *joch*, and the total may not exceed 2000 *joch* in any one year. Moreover, newly planted areas have to pay special taxes. Existing vineyards situated on flat land and causing serious marketing difficulties with their ordinary wines must pay a fairly high tax, which is used to subsidize marketing. By this means it is hoped to reduce the area of surplus cultivation and to convert it into arable land. The law has also solved the problem of direct bearing plants by ordering their destruction or top-grafting, though in such cases compensation or a money subsidy from the State is to be paid. No compensation will be paid to vineyards of this type exceeding two *joch* unless the vine is the principal plant grown on the holding in question.

The law gives full powers for the future regulation of vine-growing by means of Orders. Varieties of wine and table grapes have been fixed for the various vine-growing regions ⁽¹⁾. In selecting table grapes, the needs of foreign markets have been given careful consideration. Various other measures protect vine-growers against trade abuses. The cultivation of and trade in vines is strictly supervised and the seller is made responsible for the purity, uniformity and quality of the different varieties.

These measures give the Government the power of controlling production and sale and so also of removing marketing difficulties. Vine-growing is important in Hungary not only for economic but also for social reasons, since more than 100,000 agricultural workers live by it. Marketing difficulties are mainly a result of the dependence upon exports, which again is due to the relatively small *per capita* consumption of grapes (2.7 kg.) and wine (37.9 litres). In some years all difficulties in marketing an average harvest would disappear with an increased consumption of 10 litres per head per annum. For this reason the order sets up several selling organizations to increase the consumption of wine.

Finally the law requires owners of vineyards of more than a certain size to appoint administrators with specialised secondary or higher education. The same duty falls upon owners of orchards.

Regulation of fruit exports.

The Office for Foreign Trade regulates exports of fruit and seasonal products as follows. Exportation proceeds under supervision, and exports to the chief importing countries may only take place through the "Hungarian Union for Fruit Exports" which is to be set up. Only those exporters may join the Union who agree always to pay the producer export-quality prices. They must not undersell on foreign market and must attend to the standards of quality and help to improve quality by all methods.

⁽¹⁾ Order (No. 85,000, 1938 F. M.) on the application of the law regarding vine communes. Published in No. 243 of the *Budapesti Közlöny* of October 30, 1938.

A further obligation is a minimum export. The Office of the Union supervises the fulfillment of these obligations. Export quotas are not allotted within the Union.

These have been certain new regulations regarding the export quality of peaches, apricots and table grapes ⁽¹⁾.

Agricultural credit.

Formerly the Statutes of the Bank of Issue only permitted the discounting of bills with a maximum maturity of six months. The Statutes as modified distinguish between agricultural commodity bills and agricultural production bills. Commodity bills are for based on deliveries of goods and other supplies occurring in the normal course of farming operations. On the other hand production bills, which can run for nine months, are based on the farmer's credit operations for obtaining money needed to cover the cost of the production process or production period. The Bank of Issue only discounts production bills if the financing institute presenting the bill declares that the credit was granted for purposes of production and that the debtor is known as a solvent and capable farmer. This is done by means of form which in some cases, is also confirmed by the Chamber of Agriculture. At present this type of bill does not exist in any other country. The stamp duty on bills has been reduced from 5 to 2 per cent. as a further aid to seasonal credits for agriculture ⁽²⁾.

Other measures.

To put the different measures aiming at the supervision of the *cereals* market on a sound basis, the Government made the opening of new mills and the extension of existing ones dependent upon the consent of the Minister of Industry ⁽³⁾.

A further ordinance ⁽⁴⁾ empowered the Minister of Agriculture to order the *eradication of maggot and similar pests from lentil, pea and vetch* crops in all communes in which, or near which, the State, a public body, or an agricultural union, operates an establishment for the eradication of such pests. When such an order is issued producers are required to report the area cultivated and the size of the crop, while the introduction of the above named crops into the area in question is forbidden. The products named may be put on the market in the districts mentioned only after the eradication process has been carried out and only in specially marked sacks.

⁽¹⁾ Order (No. 5670, 1938, M. E.) on the supervision and testing of quality of table grapes intended for export. Published in the *Budapesti Közlöny* No. 180 of August 13, 1938. — Order (No. 6130, 1938, M. E.) on the supervision of exports of peaches and apricots. Published in the *Budapesti Közlöny* No. 194 of September 1, 1938. — Order (No. 93420) on the supervision of exports of certain varieties of table grapes. Published in No. 213 of the *Budapesti Közlöny* of September 24, 1938.

⁽²⁾ Order (No. 1509, 1938, P. M.) on the duties on agricultural bills. Published in the *Budapesti Közlöny* No. 142 of June 29, 1938.

⁽³⁾ Order (No. 4450, 1938, M. E.) on limiting the building or extension of mills. Published in the *Budapesti Közlöny* No. 226 of October 11, 1938.

⁽⁴⁾ Order (No. 106, 153, 1938, F. M.) on the compulsory protective measures against corn-weevil in lentils, peas and vetch. Published in the *Budapesti Közlöny*, No. 138 of June 24, 1938.

Previously the State had encouraged the *cultivation of silkworms* among the rural population, and at the same time had set up silk mills. After the War these were leased out, but in recent years the Ministry of Agriculture has brought them back under State control. In this way it is hoped to increase exports.

By an Order ⁽¹⁾ of December 1938 on the *compulsory leasing of neglected landholdings* the Minister of Agriculture can order owners of property which has remained uncultivated in part or in whole for one year to attend to its cultivation or else to lease the property either in whole or in part, within a prescribed time. If the land has been neglected for more than two years the Minister does not need to give the owner the first of these two alternatives. Such lands may only be leased to small tenants.

To improve the cultivation of cereals 6,000 metric tons of seed wheat and 2,000 metric tons of seed rye were distributed, the State paying the price difference and transports costs. Thus the farmers had to pay only the normal price of the grain.

The *scarcity of manure* remains a great obstacle to agriculture in Hungary. The consumption of artificial manures specially low on the smaller farms. The Government has therefore taken several measures to encourage and facilitate its consumption.

A two-year *course on horticulture* has been arranged in the Faculty of Agriculture of the University for Technical and Economic Sciences. Previously there was only a secondary technical school for horticulture.

IRELAND

The general position of Irish agriculture in recent months has been characterised by the continued increase in the value of agricultural exports. This is of special importance as about half of the total value of annual agricultural output is represented by exported produce. The value of annual agriculture exports rose from £13,934,000 in 1935 to £16,437,000 in 1936 to £16,938,000 in 1937; and the value for the eleven months January to November 1938 was £17,476,000 that is greater than that for the whole year 1937. There have been considerable increases in each of the four most important individual items.

Value of Exports of Irish Agricultural Produce.

	January-June		January-November	
	1938	1937	1938	1937
	£	£	£	£
Total	7,780,130	7,069,183	17,476,320	14,334,899
Cattle	3,853,993	3,467,252	8,870,745	7,018,258
Bacon and ham	876,892	743,824	2,062,248	1,595,797
Butter	741,396	570,924	2,122,804	1,549,962
Eggs	780,284	619,654	1,159,438	853,007

⁽¹⁾ Order (No. 8730, 1938, M. E.). Published in the *Budapesti Közlöny* No. 271 of December 2, 1938.

From these figures it can be seen that the increase that has been going on in recent years was intensified in the second half of 1938, mainly by a very large increase in the value of cattle exports. Cattle exports account for about half of the total value of Irish agriculture exports.

This increase in the total value of agricultural exports is due mainly to a rise in prices obtained on export markets. An index of exports prices (1930 = 100) rose from 61.7 in 1935 to 66.6 in 1936 and to 74.9 in 1937; in January 1938 it stood at 81.2, rose suddenly in May and June to 89.5 and 95.0 respectively and was 89.8 in September 1938, the latest figure available.

In contrast with exports of agricultural produce, exports of industrial goods were less in value in January-November 1938 than in the corresponding period of 1937. Further, the much more important item, imports of industrial goods, was also smaller in this period of 1938 than in the same period of 1937; the figure for 1938 is £25,521,035, for 1937, £28,115,612 ⁽¹⁾.

This, and the fact that the number of unemployed has been greater in recent months than it was in the corresponding period of 1937, point to a deterioration of the general economic situation.

Agricultural prices have been, however, considerably higher in 1937 than they were in the preceding year.

Agricultural Price Index Numbers.

(Base 1911-13 = 100).

	1936	1937	1938
January	83.4	92.1	104.1
February	82.1	93.8	107.4
March	82.8	98.6	108.3
April	86.0	103.6	108.5
May	90.0	106.5	111.5
June	90.8	107.9	114.5
July	90.7	110.5	112.1
August	92.2	106.9	111.4
September	91.8	106.3	114.1
October	98.1	110.4	116.3
November	95.7	106.9	...
December	98.9	108.3	...

The prices of the most important individual products of Irish agriculture have been higher in 1938 than in 1937. Cattle accounted for nearly twenty per cent. of the total value of agricultural output in 1936-37, and are by far the most important indi-

⁽¹⁾ The adverse balance of trade of the twelve months December 1937 to November 1938, £17,609,900, was about £3,400,000 less than in the corresponding period 1936-37 but the same approximately as in the same period of 1935-36 and 1934-35.

vidual product. The prices of cattle on the Dublin market averaged 21.25s. per cwt. in 1935, 23s. in 1936, and 29.5s. in 1937; and during 1938 this rise has continued. From 33s. in January the price rose to a 38s. in June. It then fell to 31.5s. in October, the latest figure available; this fall is, however, a seasonal movement, the prices realised in the autumn of 1938 being the highest autumn prices since 1932.

The prices of pigs and of butter, two other of the most important products, are subject to government regulation. Pigs prices were at about last years's level ⁽¹⁾. Butter prices, on the other hand, were considerably higher ⁽²⁾.

Certain agricultural costs have risen. Particularly is this the case with feeding-stuffs. The prices of maize, maize-meal, linseed cake and meal were higher in the third quarter of 1938 than in the same period in 1937. Cotton-seed cake, and certain other feeding stuffs were, on the other hand, cheaper.

There has been no important change in Government agricultural policy in recent months. However, in November 1938 the Government agreed to a request from a deputy in the Dail for the appointment of a Commission to enquire into the conditions of Irish agriculture.

Foreign trade regulations.

Trade Agreement with Germany. — The Trade Agreement signed in January 1935 was, in November 1938 extended for a further period of twelve months beginning on January 1, 1939. Arrangements have been made for the export to Germany in 1939 of cattle, eggs, meat products, and herrings. The new agreement provides that German purchases in 1939 will be made on the open market; this obviates the necessity for special price arrangements between the Governments.

The total value exports to Germany has increased considerably since 1934; but this total still remain but a very small percentage of total Irish exports. Exports to Germany in the years 1934 to 1937 valued £163,828, £493,982, £640,102; and £840,492 ⁽³⁾. The total value of Irish exports in 1937 was about £22,000,000.

Cereals.

Cereal-growing in Ireland is encouraged by various measures taken in accordance with the Agricultural Produce (Cereals) Acts, 1933-35.

Wheat. — The wheat-grower is guaranteed a statutory minimum price and is assured a market for his produce.

The statutory minimum prices are fixed two years in advance and have already been fixed for the crops of the 1939-40 and 1940-41 seasons. Four official grades of wheat based on bushel weight are established and prices for each grade are fixed for each month of the year. These statutory minimum prices are to be the same in 1939-40 and 1940-41 as they were in the two preceding seasons.

⁽¹⁾ See page 83.

⁽²⁾ See page 83.

⁽³⁾ The figure for Austria rose from £1,299 to £2,045, an insignificant amount.

In addition to this statutory regulation, wheat prices are regulated by agreement between the Irish Beet Grower's Association and the Irish Flour Millers Association. An agreement reached in September 1938 fixed minimum prices considerably higher than the statutory minimum; these prices are the same as those agreed upon last year except that a new fourth grade, not corresponding to an official grade, is introduced and the price for this grade is fixed 1s. higher than the fifth grade in which wheat now coming into the fourth grade previously fell.

Prices for Home-Grown Wheat for Crops of the 1939-40 and 1940-41 Seasons.

(a) *Statutory minimum prices.*

Prices per barrel of 20 stones.

Grade, according to bushel weight	September- November	December	January- February	March-July	August
1. - Not less than 62 lb.	27s.	27s. 6d.	28s.	28s. 6d.	27s.
2. - Less than 62 but not less than 59 lb.	26s. 6d.	27s.	27s. 6d.	28s.	26s. 6d.
3. - Less than 59 but not less than 56 lb.	26s.	26s. 6d.	27s.	27s. 6d.	26s.
4. - Less than 56 but not less than 53 lb.	24s.	24s. 6d.	25s.	25s. 6d.	24s.

(b) *Minimum prices fixed by agreement between
the Beet Growers Association and Millers Association.*

Prices per barrel of 20 stones.

1. - Not less than 62 lb. 30s. 6d.
2. - Less than 62 but not less than 59 lb. 30s. 0d.
3. - Less than 59 but not less than 56 lb. 29s. 6d.
4. - Less than 56 but not less than 53 lb. 28s. 6d.
5. - Less than 53 but not less than 50 lb. 27s. 6d.

In order to ensure that all the wheat harvested shall be absorbed by the mills, the Acts provide that of the quota of wheat to be milled allotted to each registered miller for each season, a percentage to be fixed for each season by the Minister for Agriculture, shall be home-grown wheat. For the 1938-39 season this percentage was fixed at 35 ⁽¹⁾; but by a Variation in Order ⁽²⁾ made in October 1938, it was reduced to 30.

⁽¹⁾ See the September 1938 issue of this Chronicle p. 446.

⁽²⁾ Home-grown Wheat (National Percentage for Cereal Year, 1938-39) (Variation) Order, 1938.

Maize. — A further provision of these Acts is that all maize meal mixture shall contain a certain percentage by weight of home-grown cereals. This percentage has been fixed from time to time by the Minister for Agriculture; since August 1, 1938 it has been 10 per cent. ⁽¹⁾.

This provisions was intended to ensure a ready market and reasonable prices for home-grown barley and oats. The main object of the Acts was, however, to encourage wheat-growing, and now that the area sown to wheat has increased from less than 22,000 acres in 1932 to over 220,000 in each of the last three years and has become an important source of receipts from arable-farming, the need to grow oats and barley as a cash crop is smaller than it was. Although it has been necessary to fix only a low compulsory admixture percentage in order to absorb the surplus of saleable barley and oats in recent years, the maize-mixture regulations have been detrimental to the interests of stock-breeders because they have tended firstly to make the price of maize-meal higher than it otherwise would have been, and secondly to restrict the freedom of choice of feeding-stuffs. In these circumstances the Minister for Agriculture has announced that in September 1939 the maize-mixing scheme will be abolished.

Regulation of the price of bread.

Bread prices in Ireland are regulated in accordance with the *Bread (Regulation of Prices) Act, 1936*. This Act empowers the Minister for Industry and Commerce to fix a standard price for flour; this is not a price to be adhered to by millers and the public in actual sales nor a statutory maximum or minimum, but serves solely for the calculation from a schedule set up in accordance with the Act, of a minimum retail price for bread. In June 1938 the standard price of flour was 48s. 6d. per sack of 280 lb., and this gave a retail price of bread of 11½d. per 4 lb. loaf. Since then two changes have been made; the first by an Order issue at the end of August which reduced the standard price of flour to 46s. per sack, and then by an Order made at the end of October which further reduced it to 41s. 6d. per sack. This latter price gives a minimum retail price for bread of 10½d. per loaf, 1d. per loaf less than the June price.

Milk.

The regulation of the supply and price of milk is provided for by an Act passed in 1936. This gives the Minister for Agriculture power to set up Milk Boards, representing producers and distributors to control the milk market in any districts designated for this purpose. On the recommendation of a Milk Board the Minister of Agriculture may establish statutory minimum wholesale prices for milk in the district over which the Board has control. The following prices to be paid by registered wholesalers were accordingly fixed by Orders issued by the Minister for Agriculture.

The prices payable by registered retailers for milk bought directly from registered producers are 2d. per gallon higher in the Dublin District, but in the Cork District, where in the period October 1, 1937 to April 30, 1938 they were 1d. per gallon higher, they are now the same as those payable by registered wholesalers.

⁽¹⁾ See the September 1938 issue of this Chronicle, p. 446.

In the Dublin District the unweighted average price for 1938-39 is almost 1d. per gallon higher than that for 1937-38; in the Cork District the average is only $\frac{1}{6}$ th of a penny higher ⁽¹⁾.

Minimum Prices to be paid to Registered Milk-Producers.

For each gallon of milk delivered at the premises of the producer to registered-wholesalers.

	May-July	August	September	October-April
<i>Dublin District:</i>				
1937-38	8 $\frac{1}{2}$ d.	8 $\frac{1}{2}$ d.	1s. 0 $\frac{1}{2}$ d.	1s. 0 $\frac{1}{2}$ d.
1938-39	8d.	10d.	10d.	1s. 2 $\frac{1}{2}$ d.

	May-August	September	October	November-March	April
<i>Cork District:</i>					
1937-38	8 $\frac{1}{2}$ d.	8 $\frac{1}{2}$ d.	1s. 0 $\frac{1}{2}$ d.	1s. 0 $\frac{1}{2}$ d.	1s. 0 $\frac{1}{2}$ d.
1938-39	8 $\frac{1}{2}$ d.	11 $\frac{1}{2}$ d.	11 $\frac{1}{2}$ d.	1s. 0 $\frac{1}{2}$ d.	...

	May-July	August-September	October-April
<i>Leinster District:</i>			
1938-39	8d.	10d.	1s. 4 $\frac{1}{2}$ d.

The funds required to cover the expenses of these boards are obtained by means of a levy on milk producers, wholesalers and retailers. In 1937 this levy made was by both the Cork and the Dublin Boards at the rate of $\frac{1}{4}$ d. per gallon. In September 1938 the Dublin Board reduced its levy to $\frac{1}{7}$ d. per gallon; the levy imposed by the Cork Board remains at the old rate.

Dairy produce.

The Dairy Produce (Price Stabilisation) Act, 1935 provided for bounties to be paid on exported dairy produce, with the object of stabilising the prices received by the producer. Funds for this purpose are provided by a levy on the sales of the products concerned. This system was in continuous operation till the autumn and winter of 1937 when the improvement in the external market led to a suspension of both bounties and levy.

Note: The coming into force of the milk "special designations regulations" described in the September, 1938 issue of this Chronicle p. 443 has been postponed till April 1939.

⁽¹⁾ Assuming that the price of 1s. 0 $\frac{1}{2}$ d. per gallon be established for April, 1939.

In the summer of 1938 new bounties and levies were introduced and the rates of these have since been increased. The latest changes were made by orders coming into effect of September 1, 1938 which made the following changes:—

Creamery Butter. — The bounty on creamery butter has been increased by 10s. per cwt. over the rates previously in force ⁽¹⁾.

An Order, coming into force of June 1, 1938, exempted from the levy fixed on May 1, 1938 at 6s. per cwt. on all sales of creamery butter established, all creamery butter put into cold store before September 17, 1938 ⁽²⁾.

Cheese. — The bounty remains at the rate fixed in May 1938, i.e. 5s. per cwt. and the rate of levy, at 5s. per cwt. on raw cheese and 7s. per cwt. on processed cheese.

In addition to these measures the Government has since April 1938 guaranteed to creameries a given return on their butter sales, a return independent of the price obtained on the export market. An Order ⁽³⁾ made in December 1938 fixed the guaranteed minimum price at 147s. per cwt.; this is an increase of 9s. per cwt. over the price previously guaranteed ⁽⁴⁾.

Pigs and bacon.

The supply and prices of bacon pigs and bacon in Ireland are regulated by the Pigs Marketing Board and the Bacon Marketing Board set up under the Pigs and Bacon Acts, 1935-1937. The Pigs Marketing Board has power to fix, and regularly fixes, two prices, an "appointed" price which is an actual price for pigs and carcasses of pigs sold to factories or otherwise, and a "hypothetical" price, which is the price the Board considers "would under normal conditions be the proper price thereof". Should the hypothetical exceed the appointed price each licensee or registered minor curer has to pay the Board a levy calculated on the basis of the price difference. The money so received by the Board is used to make payments to licensees or minor registered curers when appointed prices exceed hypothetical prices.

Both the "appointed" prices and the hypothetical fixed during the second half of 1938 show general decreases. Appointed prices were from 3 to 8s. per cwt., according to the grade, lower in November than in May; the prices fixed in the middle of December were, however, 1 to 2s. per cwt. higher than those fixed in November. "Hypothetical" prices were lower in November than they were in July by from 4 to 11s. per cwt., according to grade, but they also were higher in December by 1 to 2s. per cwt.

⁽¹⁾ Bounty on creamery butter "delivered in Eire and on which a levy at the appropriate rate has been paid", 20s. per cwt., on creamery butter "approved within the rules relating to the marketing of butter made by the Minister of Agriculture in 1937", and exported, 14s. per cwt on creamery butter "not approved" and exported 11s. per cwt. See the September, 1938 number of this Chronicle p. 444.

⁽²⁾ See the September, 1938 number of this Chronicle p. 444.

⁽³⁾ Creamery Butter (Minimum Prices) (No 3) Order, 1938.

⁽⁴⁾ See the September 1938 issue of this Chronicle p. 444. The price quoted is for lots of not less than 20 cwt.; for smaller lots the price is 151s. per cwt.

The appointed prices have remained considerably below the hypothetical prices, and Orders have been made fixing the levies to be paid by licensed bacon curers, during the first half of 1939. The levy to be paid to the Bacon Marketing Board is to be at the rate of 4*d.* per carcass used; that payable to the Pigs Marketing Board, which had during the 1938 been at the rate of 4*d.* per carcass, is in the first half of 1939 to be 1*d.* per carcass.

The principal function of the Bacon Marketing Board is to control the quantity of bacon produced and of sales on the home-market. For this purpose the Board issues monthly "Production Orders" and "Home-Sales Orders." The quantities established for the months July-September 1938 were higher than those for the corresponding months of 1937. The considerable increase in production quotas has been absorbed mainly by the home-market, the export quotas for this period established by the Minister for Agriculture being only slightly higher than those for the same period of 1937.

Bacon Production, Home-Sales and Export Quotas.

(Hundredweight).

	Production		Home-Sales		Export Quotas	
	1937	1938	1937	1938	1937	1938
1st quarter	211,500	210,500	103,000	105,000	121,710	121,755
2nd quarter	216,000	206,000	111,900	116,000	119,978	123,049
3rd quarter	258,000	299,000	122,000	140,000	144,211	149,810
4th quarter	252,000	266,000	131,000	149,000	145,575	...
Total . . .	937,500	981,500	467,900	510,000	531,474	...

Prices for bacon on the external market have in recent months been considerably below the home-price. The import of bacon otherwise than under licence is prohibited; an order issue in May 1938 ⁽¹⁾ gave the Minister for Agriculture the power to attach very strict conditions of control to bacon import licences.

Sugar-beet.

The prices to be paid for sugar-beet in Ireland are fixed each year by negotiation between the Irish Sugar-Beet Growers Association and the Irish Sugar Company, a monopoly company on the Board of which are a number of Government-appointed directors. Failing agreement the prices are fixed by an independent arbitrator.

The 1938 prices were fixed by arbitration, and lengthy negotiations have so far led to no agreement on prices for 1939.

⁽¹⁾ Bacon (Regulation of Import) Order, 1938.

Livestock improvement.

Cattle-breeding Scheme. — The scheme is to be continued in 1939 on the same basis as in 1938. The regional Committees of Agriculture give financial assistance to farmers and others for the purchase and maintenance of bulls of high quality and the services of high quality bulls are made available at greatly reduced rates. The Cork Country Committee of Agriculture decided in January 1939 to increase the premium it will pay to each applicant selected for the purchase of a "premium bull" from £ 10 to £ 12.

Minimum agricultural wages.

The Agricultural Wages Board set up under the Agricultural Wages Act, 1936 made an Order in January fixing statutory minimum rates of wages payable to agricultural workers after the end of January. No change is made in the rates fixed in May 1938 for adult workers ⁽¹⁾. Junior workers between 16 and 18 years have however now been divided into two classes and separate minimum rates fixed for each class. Workers under 18 but not under 17 have now to be paid a minimum of 18s. per week of 54 hours, to be compared with 16s. 6d. for workers in the class, under 17 but not under 16, in which they were previously included ⁽²⁾.

ECONOMIC BIBLIOGRAPHY

A. SERPIERI: *Principii di economia politica corporativa*. Firenze, Soc. An. G. Barbéra, 1938-XVII.

There have been many books of a didactic nature in Italy concerned with the economic and social doctrines of corporatism, some of which are of very great value. Among these Professor Serpieri's new book takes an exceedingly high place. It was written primarily as a text book and, while being an independent treatise on general theory forms an introduction to a course of agricultural economics by the same author which, to the great satisfaction of all students of this science, is to be published shortly.

A need is felt among economists for a carefully formulated exposé of the principles of corporative economics, given its rightful place in a logical system, and fitted without prejudice into the general trend of economic thought. This need is now filled by Serpieri's work, which is thereto destined to have a much wider importance than that of an ordinary text-book.

The author's well-known gifts — acuteness of vision, sure intellectual judgement and power of synthesis, not to mention his thorough training — are all revealed in this volume. In addition to an ordered and lucid exposition, the book offers a large number of original points of view, while some subjects are treated with a freshness of approach which is very effective. As an example, we may cite the chapter devoted to the process

⁽¹⁾ See the September issue of the Chronicle p. 348.

⁽²⁾ Considerably higher minimum rates are fixed for certain specified areas.

of production in an exchange economy, where — avoiding the hackneyed generalizations of many of the text books and treatises — a comprehensive view is taken of the mechanism and interplay of forces and factors in this process.

In spite of the frequent and superficial criticisms of the general theory of economic equilibrium, the author has, in our opinion, made a particularly felicitous and successful attempt to put this theory in its rightful place in contemporary economic thought.

In the last chapter of the book the fundamental nature of corporatism is examined and the fitted in with the general theory of production and economic choice. In the light of this the author considers the main practical experiments of Fascist economic policy, such as the back-to-the-land movement, the wheat campaign, land settlement and reclamation, and autarchy.

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CROP INSURANCE IN THE UNITED STATES OF AMERICA

CONTENTS:— Attempts at private insurance. — Report of the Committee of 1936. —
Law of 1938.

Insurance against crop damage resulting from adverse natural conditions is of quite recent origin, and until lately has been very little developed. It is proposed in this article to give some account of its organisation and progress in the United States of America ⁽¹⁾.

Attempts at private insurance.

The first attempt at insuring crops against damage from adverse natural conditions was made by a private company at Minneapolis in 1899; previously hail and fire insurance were the only forms of crops coverage existing in the United States.

Between 1917 and 1921 certain fire insurance companies introduced three different types of insurances.

The first, which was offered in 1917 in the States of North Dakota, South Dakota and Montana, covered all the risks to which crops are liable with the exception of fire, floods, frost and want of proper care in cultivation ⁽²⁾.

The amount of insurance was fixed at 7 dollars per acre under wheat, flax, rye, oats, barley and spelt.

It has been noted ⁽³⁾ that this method, by which it is a very simple matter to determine the amount of insurance, could not be applied as it stands to a wide range of crops in different parts of the country varying greatly in yields, without either underinsuring certain risks or overinsuring others.

In the case of total crop failure, the company undertook to pay in full the amount of the insurance; in the event of partial loss, the compensation paid was equal to the difference between the policy value and the value of the crop harvested on the area insured, this latter value being estimated at the prices stipulated in the policy.

The companies operating this form of insurance could only to a limited extent fulfil their engagements, owing in part to severe droughts over large areas of the

⁽¹⁾ Hail insurance was dealt with in an article which appeared in this *Bulletin* of April 1934.

⁽²⁾ The following information on the three forms of insurance policies has been taken from the important study of VALGREN, V. N.: "Crop Insurance: Risks, Losses and Principles of Protection", U. S. Dept. of Agriculture Bulletin, No. 1043.

⁽³⁾ VALGREN, in the above study.

States concerned, in part to inadequate safeguards taken by the companies, and also to other causes.

The second form of insurance was introduced in 1920. This type of policy insured the farmer against all crop risks other than fire, hail, wind, tornado, failure of seed to germinate, or want of proper care at the time of sowing, cultivation or harvesting.

The amount of insurance to the acre was determined according to an estimated expenditure for each separate process involved in crop production, with an additional allowance for seed and for rental value of the land.

It as been pointed out ⁽¹⁾ however that this method, by which the amount of insurance is established on the basis of factors comparatively easy to determine, has the defect that it does not readily lend itself to a differentiation between good and poor farming.

In the event of total destruction of the insured crop, the amount of insurance was paid in full. In the case of partial loss, the compensation given by the company was as before equal to the difference between the policy value and the value of the crop harvested. This latter value was not however fixed in advance as in the first type of insurance, but on the basis of market prices at the time of adjustment. This form of insurance therefore gave protection to the farmer not only against crop damage but also against a fall in prices of the products insured. The consequences of a very heavy drop in prices had to be met by the insuring company.

The third form of crop insurance, introduced in 1921, covered the same risks as the type just examined.

The amount of insurance per acre was established according to a certain percentage of the average yield obtained by the policy holder during the past five years, such percentage being calculated in dollars on the basis of the prices ruling during that period.

This method, it is said ⁽¹⁾, has the merit of determining as accurately as possible past results, which undoubtedly form the most reliable basis for the required estimate of future results. On the other hand it is by no means easy to apply; few farmers keep records of yields from year to year and a large proportion of tenant farmers have not worked the farms they occupy long enough to compute a reliable average yield.

With this form of crop insurance the company undertook, in the event of total loss, to pay 75 per cent. of the cost of the field operations actually carried out at the date of the damage. Such compensation was not however to exceed 75 per cent. of the total insurance carried, nor the cost of replacing the whole or any part of the average harvest with products of similar kind and good quality, nor finally to exceed the margin, if any, between the market value of the crop actually harvested and the amount insured. Under this last provision the company was enabled to take advantage of price variations of the products in either direction.

⁽¹⁾ VALGREN, *Op. cit.*

In 1921 and subsequent years some companies continued to offer crop insurance, most of which however was on fruit and market garden produce; the amounts insured dwindled to very small proportions.

A small company in Kansas undertook in 1930 field crop insurance, insuring the farmer against crop damage and also against price falls; it had heavy losses owing to a severe drop in prices.

In short, the insurance companies failed in their attempts to organise crop insurance in the United States. The following were the main reasons for their failure: the limited area over which insurance was operated, with consequent limited spread of risks; inadequate data for establishing a proper actuarial basis, and finally the attempts to insure the farmer's income rather than the yield losses alone (¹).

Report of the Committee of 1936.

The subject of crop insurance was in consequence constantly before Congress and under consideration by the Department of Agriculture.

The assumption by the Government of far-reaching obligations on account of droughts and other disasters affecting crop production seemed to point the way to the desirability of Government action in planning crop insurance on a scale that would extend the risks over areas so large that a local crop failure would not involve failure of the whole scheme.

At the present time data are available enabling the nature of any crop insurance and advantage may be taken of the results of previous experience (²).

In September 1936 the President of the United States appointed a Committee under the chairmanship of the Secretary of Agriculture for the purpose of preparing a scheme of crop insurance. This Committee, in accordance with the directions given by the President in a letter to the Secretary of Agriculture, was to prepare a report and recommendations for legislation providing a plan for "all-risk" crop insurance. In preparing its report, the Committee was to utilise the extensive crop insurance being studied in the Department of Agriculture. The final recommendations for the drafting of a measure were to be drawn up with the advice and assistance of national farm organisation leaders.

The President added that he considered that it would be wise for the first year, to limit the application of the plan to one or two major crops. He stated that during the previous three and a half years the Federal Government had helped farmers to meet emergencies of two kinds: the collapse of prices resulting from the huge surpluses, and the crop failures due to drought. The time had come to draft permanent measures for safeguarding farmers against risks of either kind. "Crop insurance and a system of storage reserves should operate so that the surpluses of fat years could be carried over for use in the lean years".

(¹) REPORT AND RECOMMENDATIONS OF THE PRESIDENT'S COMMITTEE ON CROP INSURANCE. Washington, 1936, p. 5.

(²) REPORT AND RECOMMENDATIONS, p. 4.

Such measures should contribute to the general welfare: first by safeguarding the farmer's income against risks whether of crop failure or of price collapse; by protecting consumers against shortages of food supplies and against large price fluctuations; and lastly by providing an even flow of farm supplies and by stabilising the purchasing power of farmers, and thus assisting both business and employment.

The President added that he had been impressed by the work of the Department of Agriculture in developing actuarially sound methods, and particularly with regard to a crop insurance scheme which should include payment of premiums and compensation in kind. This plan should make it possible to base the premium rates on the productivity of the individual farms as shown by records of past production, of which a large number are already on the registers of the local committees of the Agricultural Adjustment Administration. By this method any payment by farmers of one region for the risks of another region would be avoided ⁽¹⁾.

In the course of drafting recommendations for legislation on the subject the Committee not only invited the opinion and the collaboration of the national farm organization leaders, but also consulted representatives of hail and fire mutual insurance companies, of share companies and of firms warehousing agricultural products.

At the second meeting, called by the Committee for November 7, with the representatives of the national farm organisations, a resolution was passed recommending, *inter alia*, the strengthening of the programme for the maintenance of parity income ⁽²⁾, as an aid to the stabilization of supplies of farm products in the interest of both producers and consumers. With this object, a permanent programme was recommended of surplus storage and loans on farm products, with voluntary crop insurance when it appears to be practicable. The resolution added that no programme of storage or insurance could be permanently effective unless accompanied by some effective regulation of production and of distribution of farm products.

It was noted at these meetings that the wheat-growers and their representatives displayed a special interest in crop insurance, and pronounced in favour of a system of crop insurance, combined with commodity loans on the wheat in storage ⁽³⁾.

The representatives of share companies and of mutual hail and fire insurance companies, at a meeting held on November 6, 1936, were of opinion that a national programme of crop insurance would prove too large an undertaking for private companies, but added that they would be ready to co-operate with the Government. It was agreed that for this purpose the companies in question would appoint representatives to take part in further discussion of schemes.

⁽¹⁾ REPORT AND RECOMMENDATIONS etc. p. 28.

⁽²⁾ "Parity income", in the vocabulary of the Agricultural Adjustment Act of 1938 means an individual net income from agriculture the ratio of which to the other net income from non-agricultural sources is the same as for the period August 1909 to July 1914.

⁽³⁾ REPORT AND RECOMMENDATIONS etc. pp. 8 and 9.

As the proposed plan for crop insurance involves storage problems, the Committee also conferred with representatives of warehousing firms who also declared readiness to co-operate.

As result of these conversations with the different groups concerned, the Committee reached the conclusion that a crop insurance scheme should be carried out by the Government and that, in the first instance, the scheme should apply only to wheat.

It was considered that payment of premiums and of compensation should be either in kind, or in cash equivalent. Such a plan would have the effect of forming wheat reserve stocks in good years and releasing them in years of crop failure; in this way supplies would be ensured in the event of poor harvests and fluctuations in supply and in prices would be reduced.

The Committee was of opinion that any scheme of crop insurance which combined yield insurance and formation of commodity stocks would be outside the scope of private insurance. For such a scheme to succeed it would have to be co-ordinated with the agricultural policy as a whole, and in consequence it fell within the sphere of Government action.

As we have already said private companies which had attempted any comprehensive crop insurance, after repeated losses, had been obliged to abandon the enterprise completely,

It was considered that the business of crop insurance should be assigned to the Department of Agriculture, where it could be co-ordinated with the other functions of the Department. The local administration of the scheme should be mainly entrusted to local authorities and committees established by the Department to co-operate with the Federal agencies in charge of the application of the Agricultural Adjustment, Soil Conservation and Domestic Allotment Acts.

In the Committee's view, the amount of insurance on any one farm should be determined on the basis of the average yield of that farm, and farmers should be insured for a percentage of this average yield fixed in advance. In the event of the yield being less than the premium established, the farmer should receive compensation equal to the difference between the actual production and the amount of the insurance. By this plan an excessive insurance would not be provided for farms on which the average yields are low, nor would too limited a cover be insured to farms with high average yields.

In certain cases the compensation payments might be made in wheat; or, if more practicable, the wheat might be sold and the proceeds handed over to the farmer. With the approval of the Committee the farmer might be granted instead a certificate to sell as he saw fit; but in such a case the policy holder would have to meet warehousing expenses from the date fixed for the adjustment of the claim.

The premiums might also be arranged in terms of wheat. In favourable circumstances, the farmer might pay the premium by delivering wheat to a local elevator authorized to receive it; the wheat might be stored there or consigned later to another depot. Payment of the premium in wheat would frequently be impracticable however, and accordingly the farmers should have the option of making an equivalent cash payment. In this case, the insuring body would be

obliged to accept the cash payments and to buy elsewhere the equivalent wheat for storage.

The Committee was further of opinion that the premium rate should be fixed on the basis of two factors: experience of losses occurring on the individual farm insured and the loss experience of the whole area. Speaking generally, equal importance should attach to the two factors, but allowance must be made for exceptions where unfairness might result from the shortness of the period for which data were available.

The regional average is required for the adjustment of the premium rate, as the experience of the base period adopted by the Committee—the six years 1930 to 1936—might on individual farms not be representative of local risks. In the studies of unitary yields it has been noted that sometimes in certain regions and on individual farms, disasters like hail, floods, or insect infestations occurring at long intervals have resulted in very high losses per acre for the six years in question: over a longer period, these infrequent happenings would have had less influence on the yield average. The Committee remarked that within limits local committees should have discretion to make the necessary adjustments, and outside these limits the power should rest with the Department of Agriculture. If later experience should prove that the circumstances were not exceptional but came under ordinary risks, the special adjustments would be abolished.

The operation of the insurance scheme may be illustrated as follows: at the time of sowing, a wheat farmer could apply to the local Committee for a crop insurance policy; the Committee would then fix, on the basis of the previous records of his farm, the amount of insurance in bushels per acre sown and the premium to be charged, checking the acreage under tillage and the quality of the land sown by comparison with the land under wheat in the base years.

The Committee of Enquiry recommended a plan of premium payments which would enable farmers in years of abundant harvests to pay the premiums for the next five years. This procedure would have the advantage of contributing to the work of the "ever normal granary" system. By payment of premiums in wheat during years of plenty, an additional outlet for surplus wheat would be ensured which would tend to price stabilization.

Actually, as already pointed out, the premiums would be payable in wheat, or if the policy holder paid the equivalent in cash, that cash would be employed for purchase of wheat. Hence, in the years when the premiums exceed the compensation payments, a reserve of wheat would be built up. This reserve would form stocks only in the years of surplus crops, which by definition are those when the premiums exceed the compensation payments, and in deficitary years it would be used to meet compensation claims. Thus the stocks—and this is emphasised by the Committee—would not constitute a potential supply. Accumulation and release of reserves would be automatically regulated by the requirements of the crop insurance scheme.

The crop insurance scheme as proposed by the Committee is not to be substituted for other farm programmes under administration by the Department of Agriculture, but should on the contrary supplement these. The effect of the

carrying out of this scheme on the fluctuations in supply and in prices is subsidiary to and not an inherent part of the scheme.

The Government organization for crop insurance would purchase wheat for a total amount corresponding to the premiums paid in cash by the policy holders, and the purchases would be made at ruling market prices. The sale of the wheat acquired as premium payments would not be regulated by the insurance agency but would take place upon settlement of the losses at the time which seemed most advantageous to the farmer.

The advantages of such a crop insurance programme were emphasized by the Committee. Although limited to wheat, it would reduce considerably the necessity for seed and fodder loans, drought loans and other relief credits, and there would be economy of the public finances in the matter of relief and allowances.

These financial advantages would amply justify State contribution towards administration and storage costs. There should also be remembered the economic and other advantages of this form of insurance not only to the farming class, but also to consumers and the general public (1).

Law of 1938.

On February 8, 1937, Senator James P. Pope of Idaho laid before the Senate of the United States a crop insurance bill based on the findings of the Committee. Provision was made for the foundation of a Federal organisation of crop insurance insuring farmers against loss in yields of wheat from drought, flood, insect infestation, plant diseases and other causes. This measure was passed by the Senate of the United States at the end of March 1937 (2).

With certain amendments, it was incorporated into the Agricultural Adjustment Act and passed by Congress on February 16, 1938, forming Title V of this Act.

In the terms of the Act:

"It is the purpose of this title to promote the national welfare by alleviating the economic distress caused by wheat-crop failures due to drought and other causes, by maintaining the purchasing power of farmers, and by providing for stable supplies of wheat for domestic consumption and the orderly flow thereof in interstate commerce".

"To carry out the purposes of this title, there is hereby created as an agency of and within the Department of Agriculture a body corporate with the name "Federal Crop Insurance Corporation". The principal office of the Corporation shall be located in the District of Columbia, but there may be established agencies or branch offices elsewhere in the United States under rules and regulations prescribed by the Board of Directors".

"The Corporation shall have a capital stock of \$ 100,000,000 subscribed by the United States of America payment for which shall, with the approval

(1) REPORT AND RECOMMENDATIONS, pp. 10 to 18.

(2) THE COMMERCIAL AND FINANCIAL CHRONICLE, New York, Nov. 13, 1937.

of the Secretary of Agriculture, be subject to call in whole or in part by the Board of Directors of the Corporation....”.

“Any impairment of the capital stock described shall be restored only out of operating profits of the Corporation....”.

“The management of the Corporation shall be vested in a Board of Directors.....subject to the general supervision of the Secretary of Agriculture. The Board shall consist of three persons employed in the Department of Agriculture who shall be appointed by and hold office at the pleasure of the Secretary of Agriculture”.

“Vacancies in the Board so long as there shall be two members in office shall not impair the powers of the Board to execute the functions of the Corporation....”.

“The Directors of the Corporation appointed..... shall receive no additional compensation for their services as such directors, but may be allowed actual necessary travelling and subsistence expenses when engaged in business of the Corporation outside of the District of Columbia”.

“The Board shall select, subject to the approval of the Secretary of Agriculture, a manager... with such power and authority as may be conferred upon him by the Board....”.

For the purposes of crop insurance the Corporation has powers as follows:

1. beginning with the wheat crop planted for harvest in 1939, it is empowered to insure “producers of wheat against loss in yields due to unavoidable causes, including drought, flood, hail, wind, winterkill, lightening, tornado, insect infestation, plant disease, and such other unavoidable causes as may be determined by the Board: *Provided, however*, that for the first three years of operation under this title contracts of insurance shall not be made for periods longer than one year. Such insurance shall not cover losses due to neglect or malfeasance of the producer or to the failure of the producer to reseed in areas and under circumstances where it is customary to reseed”.

“Such insurance shall cover not less than 50 or more than 75 per cent., to be determined by the Board, of the recorded or appraised average yield of wheat on the insured farm for a representative base period”. The Board may prescribe adjustments of this average yield from considerations of equity.

“The Board may condition the issuance of such insurance in any county or area upon a minimum amount of participation in a programme of crop insurance formulated pursuant to this title”.

2. The Corporation is empowered further “to fix adequate premiums for such insurance, payable either in wheat or cash equivalent, as of the due date thereof, on the basis of the recorded or appraised average crop loss of wheat on the insured farm for a representative base period”. The Board may prescribe adjustments of the premiums from considerations of equity.

The time or times, and the manner of the collection of the premiums are fixed by the Board.

3. The Corporation is further empowered “to pay claims for losses either in wheat or in cash equivalent under rules prescribed by the Board. In the event that any claim for indemnity under the provisions of this title is de-

nied by the Corporation an action on such claim may be brought against the Corporation". The competent court is the court of the district in which the insured farm is located without regard to the amount in dispute. Any such action must be brought within one year after the date of the notification to the claimant of the refusal of the claim.

4. From time to time the Corporation may "purchase, handle, store, insure, provide storage facilities for, and sell wheat, and pay any expenses incidental thereto. In so far as practicable, however, the Corporation shall purchase wheat only at the rate and to a total amount equal to the payment of premiums in cash by farmers, or to replace promptly wheat sold to prevent deterioration; and shall sell wheat only to the extent necessary to cover payments of indemnities and to prevent deterioration.....".

Under this title of the Act, the Secretary of Agriculture is authorized to appoint from time to time an advisory committee, consisting of not more than five members, "experienced in agricultural pursuits", to advise the Corporation with regard to giving effect to the purposes of the law.

The sections of this title and subdivisions of sections are declared to be separable, and in the event of any one or more being held unconstitutional, the validity of other sections or parts of sections will not be affected.

F. ARCOLEO.

THE PROPORTION OF ESTATES AND OF NATIVE HOLDINGS IN THE WORLD PRODUCTION OF RUBBER ⁽¹⁾

World rubber production is dependent upon the output of both European estates and native holdings. This has not always been the case; in fact only since 1921 has there been any question of native rubber growing in the Netherlands Indies, while it was much later again that the disastrous over-production of rubber was ascribed to the sudden appearance on the market of the native grown product. As a consequence of this overproduction, prices fell on several occasions and there was serious alarm among planters.

The raw material known as rubber was, up to the beginning of the present century, the product of primitive exploitation of the Amazon forests; it was a forest and not an agricultural product. It is only since the establishment of plantations in Asia that it has been possible to include rubber as an agricultural product resulting from the scientific cultivation of *Hevea brasiliensis*. This tree, indigenous in the Amazon basin, quickly became the successful rival of all the other rubber plants, *Castilloa*, *Ficus*, *Manihot Glaziovii*, etc., in which cultivation trials had been made at the beginning of the century.

⁽¹⁾ This article was also submitted as a report to the VIIIth International Congress of Tropical and Sub-tropical Agriculture at Tripoli in March 1939, the agenda of which includes the item "European and Native Cultivation".

A brief summary may be given of the history of the large rubber estates. In 1873 the Botanic Gardens at Kew succeeded in obtaining from the Amazon, through Mr. Markham, some hundred *Hevea* seeds. Later the celebrated consignment of 70,000 seeds, collected and transported with immense difficulty by Henry Wickham (who became Sir Henry Wickham in 1920), reached Kew in 1876. From these seeds 7,000 plants were successfully grown at Kew, most of which were sent to Ceylon. From these plants and some others, grown from seeds imported later, have sprung all the vast plantations of *Hevea* in Asia, which now supply 98 per cent. of the world production of rubber, 41.3 coming from Malaya, and 36.2 from the Netherlands Indies. The plants were introduced into Ceylon and Malaya in 1876: while the first plants, 33 in all, reached Java from Penang as late as 1882.

During the first thirty or forty years of the cultivation in Asia there were many false starts and discouragements. This was intelligible; it was a question not merely of acclimatizing a new plant under conditions of climate and soil entirely different from those of the original habitat, but also of establishing a quite new agricultural technique, the "tapping". For this operation a new technique had to be found, since tapping as practised by the "Seringueiros" of the Amazon caused serious injury to the trees, and such a method clearly could not be followed on estates where each tree represented a substantial amount of capital owing to the high cost of the seeds and the heavy expenses of clearing and planting the land.

The rise in rubber prices between 1909 and 1912, the period of the first development of the motor-car industry, led to the formation of large companies for the cultivation of *hevea*, followed by a period of speculation in rubber and in land suitable for rubber-growing. For the establishment of new rubber estates use was made of the experience acquired: by this time it was known that *hevea* did not, as certain planters had at first supposed, need marshy soils but that it could be grown on nearly all soils at an altitude of not more than 2,000 feet or so.

Rubber estates planted by the new companies were laid out with great regularity, a definite spacing of the trees was observed, roads were well kept up, while lopping and pruning of the trees was carried out, with more zeal than discretion. Unfortunately, however, the disastrous method of clean weeding was employed, a system now abandoned on account of the losses in soil caused by the consequent erosion.

Planters of *heveas* have from the first recognised the value of research stations, where the problems of the cultivation and of the preparation of the product are studied by botanists and chemists. In illustration of the practical value of these investigations, the progress due to the selection of very productive trees and the propagation of clones coming from these trees may be cited. On estates where selection is practised it is now possible to obtain yields double and even treble of those on estates consisting of non-selected trees.

A very short time sufficed for the development of the large European estates. The area of these in the Netherlands Indies increased from 176 hectares in 1902 to 104,413 in 1910, to 352,717 in 1920 and to 573,014 in 1930; it is now some

600,000 hectares. It may be noted that in Malaya the area of estates larger than 100 acres was 763,380 hectares in 1930 and 818,183 in 1936; for earlier dates no figures are available except for certain parts of the country.

This expansion of hevea cultivation could not but exercise an immense influence on the life of the populations of the regions where rubber estates were established. A certain distinction should however be made in this respect between the Netherlands Indies and Malaya.

In Java the rubber plantations have, in most cases, been established where there were already other tree or bush crops, such as coffee or tea plantations worked by Europeans. So as to obtain the ground space required, on certain land tea or coffee cultivation was given up and replaced by hevea; the alternative was to clear the jungle. In Sumatra, hevea cultivation spread in the neighbourhood of Deli, long celebrated as a centre of European tobacco-growing. In this way, rubber soon gained an important position, without however forming the one and only resource of the regions where it was cultivated.

The position in Malaya is different. Statistics show that hevea occupies the leading place. Out of a total agricultural area of 5,059,965 acres, 3,288,691 acres, or more than three fifths, were in 1937 under hevea plantation; among the other chief products rice, coconut, pineapple and oil palm may be mentioned.

It is of interest to study the influence of rubber-growing on the general economy of a specific region. The Non-Federated State of Johore may be taken, the choice being made purely at random, as any of the other Federated or Non-Federated States would show similar conditions.

According to travellers' descriptions, in the first half of the XIXth century the Sultanate of Johore was in a state of complete desolation; according to the 1937 returns there are now 613,510 inhabitants (930 Europeans, 350 Eurasians, 267,500 Malaysians, 268,300 Chinese, 72,600 Indians, 3,800 of other nationalities). Thus two immigrant races, the Chinese and the Indian, are very important, and a large proportion of these races works on the hevea plantations. The total number of workers employed on private undertakings amounts in fact to 82,594, or more than 10 per cent. of the whole population. Precise figures are not available as to the proportion of this total engaged on the rubber estates but it would not be far from the truth to estimate it at 80 per cent. The total of the rubber exports amounted to 86,000,000 Straits Settlements dollars, while that of the total agricultural exports was 96,000,000 dollars.

The State revenue exceeds expenditure, and there is no public debt in spite of the heavy expenses for education and medical services. No other cultivation, with the possible exception of that of palm-oil, would have been capable of bringing about so fundamental an improvement in the prosperity of vast territories. On the other hand it is certain that the replacement of natural by synthetic rubber would bring about the irreparable ruin of all these regions.

The object of this first part has been to make clear the extent to which the large European estates have contributed to the welfare of the Asiatic countries, especially Malaya and the Netherlands Indies. It may be noted, in passing, that during the first years of rubber cultivation the necessary measures

for preventing soil exhaustion, whether by erosion or by a too intensive working, were rather neglected. The importance of conserving that most valuable capital of all, the soil, was however soon recognised by adopting measures against leaching and by using green manure and cover crops.

We now pass to "native cultivation". It is convenient to make a distinction between Malaya and the Netherlands Indies, the two countries here dealt with.

The Malaya statistics distinguish the areas occupied by "estates" from those occupied by "small holdings". The estates or large plantations are defined as holdings of more than 100 acres, the small holdings as those less than 100 acres. Theoretically there is no difference based on the race of the owner, but it is rare for a "small holding" to be managed by a European. On the other hand, "estates" are sometimes owned by Chinese, Malaysians or Indians.

The growth of the "small holdings" is due to the policy followed by the British administration, which, while encouraging the development of European or Asiatic capitalist plantations or estates, reserves much of the land for the requirements of the native population. In this connection the Malay Reservation Enactment of the Federated States of 1913 may be quoted, which empowers the governments of the States to select at their own discretion regions as Malayan reserves, upon which the alienation of lands to other nationals is prohibited.

In 1934 a special department was established at the Kuala Lumpur Central Rubber Station for the inspection of "small holdings"; some twenty inspectors are attached to this service, of whom three fourths are Malaysians, the remainder Indians and Chinese. The first success achieved by the new service was the improvement in the quality of the rubber produced by the small holdings. Small smoke-houses of special type were prepared for sheet rubber; their construction was simple and their cost price such that the small holders could easily purchase them. The success was so great that in 1936 there was not enough rubber of inferior quality on the market to meet the requirements of customers who wished to pay lower prices. Reductions were made moreover in the prices asked by the central establishments for drying and smoking rubber from small holders who did not possess the plant required for the treatment of the sheets. Efforts have also been made to encourage bud-grafting, to improve soils by drainage and by means of cover and green manure crops, and of diffusing information as to methods of control of the principal plant diseases. Attempts at improving tapping have not so far given satisfactory results.

The following information on the share of native cultivation in the total production of rubber in Malaya is taken from the statistics of 1937:

Area. — More than one third of the total area of rubber plantations in Malaya, viz., 1,278,309 acres out of 3,304,657 acres, consists of "small holdings".

Production. — More than one third of the total production of rubber, viz., 188,836 metric tons out of 503,494, comes from the small holdings.

Native cultivation of hevea in the Netherlands Indies attracted the attention of international trade for the first time when, about 1920, constantly increasing quantities of native rubber reached the ports of embarkation: in 1921 the

total exports from Sumatra and Borneo amounted to 5,998 tons; in 1922 to 25,517 tons, in 1923 to 53,507. It was considered, in view of these figures and as hevea trees begin to yield rubber at about 7 years of age, that the plantations from which the first large consignments of rubber came must have been planted about 1915. It has however been recently proved that the origin of native hevea planting is earlier: It was actually in 1905 that the Malay population of the coasts of Sumatra and Borneo, a population which had always maintained numerous trade relations with Singapore, began to take an interest in the young hevea plantations which were then to be seen in the neighbourhood of Singapore and the other ports of the Malay peninsula.

It is curious that the native rubber holdings were not formed in the same regions as the European estates, but in quite other parts of the Netherlands Indies archipelago. The beginning of the native cultivation was thus entirely due to the initiative of the populations of the Palembang and Djambi Residencies in Sumatra and of that of Borneo. The regions inhabited by these peoples contain immense virgin jungle and large rivers which are the only means of communication with the interior; they are thinly populated.

Between 1910 and 1914 a considerable trade in hevea seeds was reported, between Malaya and the districts of native cultivation in Sumatra and Borneo. The purchasers were Chinese and Malays who later sold plants to the cultivators.

The "*landang*" method is universally applied in the districts in question; this method consists in burning the forest so as to cultivate for a time a certain area of land which is abandoned after some years, and a new clearing undertaken. Rice is the principal crop; hence it seemed quite natural to associate the new cultivation of hevea with the old one of rice, and to plant the young heveas on the ricefields after the rice harvest was gathered. Another practice was to plant the heveas as soon as the land was cleared and a little while before the rice was sown. Rice was followed by another annual crop and this in its turn by another rice crop. By that time the heveas have reached a height which makes it impracticable to continue a catch crop. Thereupon cultivation stops; agriculture is so to speak replaced by silviculture.

The spacing of the trees is much reduced, 3.50 by 3.50 metres being the most usual distance. This makes it possible to plant 800 trees to the hectare, whereas on European estates there are not more than 300. In this way, hoeing soon becomes unnecessary, any growth of weeds is checked by the dense shading and the moist atmosphere which, at the same time, keep the soil damp.

The number of trees belonging to a single owner is considerable. Assuming that a peasant clears in one year a *bouw* (0.6 ha.) of jungle, growing food crops on each plot for at most three years, more than a thousand trees can be reckoned per owner after three years. This is an average reached after taking account of losses due to jungle fires and sales of plots of land. On the other hand there are some owners who are known to possess 20,000 trees and more.

During the first period of native cultivation, tapping was carried on by primitive processes which injured the trees. It was seen that these methods might prevent satisfactory regeneration of the bark, and methods of tapping have lately greatly improved as a result of the information made available by

the Government for the native planters. In addition the hevea trees have proved less susceptible to injury than was supposed at first.

Coagulation is effected in a very primitive manner. The latex, after collection in petrol tins, is coagulated on the spot by adding large quantities of alum. The coagulated mass is rolled out on a plank, using a bottle as roller. The cakes thus obtained are dried in the sun; for transport to markets all kinds of vehicles are used, bamboo rafts, carts, lorries, bicycles, etc.

Buyers who attend the inland markets buy up these cakes for resale to the large remilling establishments, the majority of which were in the early days at Singapore. There a product is turned out which, under the name of "blanket", has acquired a great reputation on the world market. Factories of this type are now installed among the plantations; in Sumatra and Borneo there were 16 in 1932, and in 1936 there were 45 with a total output of 53,000 metric tons of processed rubber, or about one third of the whole native production.

In the last few years decided progress has been reported in the preparation of rubber; the water content of the native product has been considerably reduced, the proportion of high quality rubber (blanket and cheet) has been increased, while that of low quality (scraps and slabs) has decreased.

The way in which the problem of labour in native cultivation has been solved is interesting. During the boom in rubber prices the tapping of the trees could not be done by the owner's family alone. Neighbours whose plantations were not yet fully grown were called in to help, and also Javanese already in the country; some workers were brought over from Java specially.

The system of payment of workers is quite original; it is called "*bagi dua*" in Malay, and is a kind of share working, where the owner and the workers divide between them the proceeds of the rubber sales. This agreement was entirely satisfactory both to the worker and to the employer. It is only during the periods of price decline in rubber that it does not answer. There are then two possible solutions: either the worker is dismissed and family work reinstated, or the share of the workers is increased, either by adopting the system of "*bagi tiga*" under which the workers receive two thirds, or that of "*bagi lima*" when three fifths of the price is assigned.

Native rubber-growing has shown itself admirably adaptable to the consequences of crises in the rubber market. The first reaction to a price fall is to send away as many workers as possible, and to have the work done by the owner's family. If prices continue to fall, tapping ceases and is resumed only when prices recover. The standard of life is easily adapted to the incomings: during boom periods all luxuries that can be obtained are secured: jewellery, house decorations, sewing machines, bicycles, motor-cars, etc. When the slump comes, rice-growing is intensified and rubber trees are not planted.

Rubber restriction, decided on in pursuance of the international agreement of May 7, 1934, came into force on June 1, of the same year. The Government of the Netherlands Indies, with a view to bringing the native growers into line with the restriction measures undertaken for the benefit of the whole rubber industry, native and European, felt it necessary to impose an export duty on native rubber. It was impossible at that time to impose a restriction

—such as was applied to the European companies—on the individual production of each native owner, since the necessary information was not available as to the number of the planters and trees, nor particulars as to areas planted.

Individual restriction only came into force on January 1, 1937. The necessary statistics had been collected and relatively precise figures obtained, making it now possible to estimate the place of the native small holdings in the total production of rubber of the Netherlands Indies.

On the basis of the 1936 returns, there were known to be 788,438 native owners of hevea plantations, possessing 582,382,725 trees out of which 140,647,781, or about one quarter, had not yet reached their full growth. The area—a calculation not based on topographical survey and consequently approximate—was about 681,187 hectares as compared with 595,777 for the total extent of the European estates at that time. The total area of the hevea plantations of the Netherlands Indies is estimated at 1,276,964 hectares, or 12,769 square kilometres, *i. e.* nearly half the area of Sicily.

As was done for Malaya, a concrete case may now be taken, *viz.*, that of the Residency of Djamby in Sumatra. This Residency covers an area of 44,923 square kilometres, or about the area of Switzerland. The greater proportion of this area is covered with virgin forest. The population is 245,272 inhabitants, including 120,386 native males. Among these are 43,189, owners of rubber plantations, or more than one third of the male population. An idea may thus be formed of the immense importance of the hevea cultivation for a people who previously knew nothing except rice cultivation or the arduous business of gathering jungle products, such as rotang, resins etc., and whose lives were passed in regions where no success had attended trials of other crops, such as coffee or cotton.

In the early stages, the native working of hevea was looked upon as a danger for the capitalist cultivation as, at certain moment, it flooded the world market and was even the most in demand. At the time of the world crisis, when adaptability was important, there was, so to speak, more elasticity about the supply than in that coming from the European estates. Further, the native-grown rubber caused complications in regard to the production restriction measures, intended to prevent over-production and to check fall of prices. No serious effects however supervened on the cultivation of the large estates; during the world crisis this also adapted itself to the circumstances, with moreover a reduction of the cost price to a level which makes it possible for the companies once more to pay dividends.

Native and European cultivation accordingly exist side by side in the great regions of production—Malaya, Netherlands Indies and Ceylon. Thanks to the energy and the perseverance of the managers or of the owners during crisis periods, both types of working have justified their existence. By means of the hevea, whether native-or European-grown, vast regions formerly poverty stricken have been transformed into regions where the native population have comfortable houses and sufficient food—where, in a word, they live well.

Humanity owes to more than one race the certainty of always having available sufficient quantities of rubber. It was Indians of the Amazon forests

who were the first to notice the strange qualities of the coagulated latex of certain wild trees; the Portuguese *seringueiros* risked their lives to penetrate into the "Green Hell" in order to tap the trees; English and American pioneers, were the inventors of the vulcanisation process; others carried the seeds from the Amazon to England, then to Ceylon and Malaya. Much too is owed to the British, Dutch and French planters and students who, during the first period of the cultivation, when no one could foresee the future, persevered in the cultivation or in the study of the hevea, and later established all the immense rubber estates which, by means of scientific selection, have succeeded in doubling yields. Lastly much is owed to the Malay peoples who, on their own initiative, established a new cultivation, which they have transformed in a remarkable manner, taking into account the economic possibilities of their country.

In conclusion, it may be affirmed that the cultivation of *Hevea brasiliensis* is feasible for any intelligent native population with a commercial mentality. Native cultivation does not necessarily mean a competition which is fatal to European cultivation. The two can exist side by side.

Dr. Walter BALLY.

INTERNATIONAL CHRONICLE OF AGRICULTURE

ARGENTINA

From 1933 there was a slow rise in the prices of raw materials, becoming more rapid in July 1936 and reaching a maximum in the first quarter of 1937. The fall in March 1937 was as sharp, if not as large, as the rise. Subject to the business cycle in industry, price movements for raw materials were in general downwards at the end of 1937 and during 1938, despite temporary recoveries which did not sensibly alter the general trend. Thus world prices for raw materials were much less favourable to Argentine exports in 1938 than in 1937.

Principal Crops exported by Argentina.

Year		Output in metric tons	Exports in metric tons for the corresponding civil year
Wheat	1935-36	3,850,000	(a) 1,724,362
	1936-37	6,782,000	(a) 4,023,189
	1937-38	5,029,500	(a) (b) 2,300,000
Maize	1935-36	10,051,206	8,381,690
	1936-37	9,134,530	9,087,363
	1937-38	4,424,000	(b) 3,000,000
Linseed	1935-36	1,510,000	1,487,926
	1936-37	1,935,000	1,802,048
	1937-38	1,539,400	(b) 1,300,000

(a) Wheat and flour. — (b) Provisional figures.

Further, not only were the 1938 harvests less satisfactory than those of 1937, but the advantage enjoyed by Argentine exports in the latter year owing to the big increase in world stocks and the poor harvests of wheat and maize in Canada and the United States disappeared in 1938, and competition from the surplus output of these commodities again had to be met.

Crop variations also had a great influence on the quantities exported; these were smaller by 55.8 per cent. than those of the corresponding period for 1937. The quantities of animal products exported varied little, maize, wheat and linseed accounting for 8.2 million metric tons of the total fall in exports of 8.4 million metric tons. During the first nine months of 1938 1,649,333 metric tons of maize were exported, compared with 7,371,137 metric tons during the corresponding period of 1937.

Variations in the value of foreign trade, as shown in the table below for half-yearly periods, have been even greater:

Argentine Foreign Trade:

In millions of pesos.

	1936		1937		1938	
	1	2	1	2	1	2 (a)
Exports	723.2	932.4	1,409.3	902.1	712.6	553.7
Imports	538.9	577.7	669.1	883.4	747.3	575.9
	+ 184.3	+ 354.7	+ 740.2	+ 13.7	— 34.7	— 22.2

(a) 5 months.

The figures for the value of exports show an increase in the first half of 1936 and reach a maximum during the first half of 1937 with the record figure of 1,409 million pesos. For the first half of 1938 the figure was only 712 million pesos — half the former amount — and it fell still further during the second half of 1938. These variations are explained by the remarks made above about world prices and harvests.

On the other hand, the variations in value of imports do not correspond exactly with those of exports. In the first place, as might be expected, the variations in the value of imports are smaller.

In the second place the variations are not synchronous, imports reaching their maximum in the second half of 1937 while exports reached their maximum in the first half. In other words, the value of exports was decreasing during the second half of 1937 while that of imports continued to increase.

The normal seasonal increase in exports (from January to April) is not enough to explain this disparity. The real reason for the high import figures is that some time must elapse before the exceptionally large profits obtained while the price of raw materials are high, can be realized and brought into circulation. Thus important orders for agricultural machinery and vehicles were placed before the fall in prices.

There has consequently been a slight fall in the balance of trade over the two half years of 1938. The regulation of imports remains necessary to enable interest payments on foreign loans to be continued. From November 9, 1938 the official selling rate of exchange for the pound sterling rose from 16 pesos (the rate of exchange in

force from December 10, 1936) to 17 pesos—a not insignificant monetary depreciation. The buying rate is maintained at 15 pesos per pound sterling.

Exchange control, introduced on November 29, 1933, continues, and the peso has three recognized rates, two official rates, (one for buying and one for selling) and the free rate. Foreign bills for regular exports (excluding wool) must be sold to the Central Bank at the official buying rate. Since January 2, 1936 the Bank has been ordered to sell them at the official selling rate to the holders of permits supplied by the exchange control commission. Bills for "supplementary" exports, freed blocked accounts, transport, etc. are dealt with on the free market at the free rate. Exchange control is very important for Argentina's agricultural policy, as agriculture is subsidized from the gains made by exchange operations.

Thus in 1937 and 1938, Argentina's economic position was first very prosperous and then distinctly less satisfactory. Prospects for 1939 are favourable and crop estimates are very satisfactory. It might be said that having made up in 1936-37 the losses suffered during the great depression, Argentina underwent a further recession in 1937-38; but learning from former experience, she has been able to stave off a serious depression by means of her very effective system of regulation.

Agricultural policy, while introducing no important innovations of principle, has been marked by increasing Government action; restricted in 1937 and more intense in 1938, it now affects all branches of agriculture.

Trade policy and immigration agreements.

Argentina conducted a very active trade policy during 1937 and 1938, and a great number of agreements were signed. These agreements, the majority of which were based on the most-favoured-nation clause, were drawn up for a short period and were easily renewable. They come under three heads.

The first class includes a series of treaties based on the most-favoured-nation clause concluded with certain European countries playing a relatively unimportant part in Argentina's foreign trade.

1. With Czecho-Slovakia (May 21, 1937). In an appendix Czecho-Slovakia allows Argentina to import fresh grapes by means of lower tariffs, while Argentina allows the import of Czecho-Slovak hops.

2. With Hungary (December 24, 1937).

3. With Poland (August 31, 1938). An additional agreement fixes the maximum duties for imports into Poland of Argentine potatoes and grapes during certain periods of the year.

4. With Greece (November 23, 1938). An appendix to the treaty fixes the maximum duties for imports into Greece of certain Argentine products (hams, cheeses, butter, skins, tannin extracts, maté, wool, etc.) and for certain Greek products (tobaccos, raisins, sponges) into Argentina.

5. With Lithuania (November 25, 1938).

In the second group come trade agreements with Argentina's neighbour States.

1. With Peru (February 3, 1937). Before signing an actual commercial treaty, the *modus vivendi* for the relations between the two countries was regulated by an agreement: an annual quota of 10,000 metric tons of Argentine wheat is admitted duty free into Peru; Argentina has lowered the duties on non-refined petroleum from Peru in such a way that each year this reduction compensates for the free allowance granted by Peru to Argentine wheat; in certain cases the wheat quota may be increased.

2. With Chili (February 18, 1938). A supplementary agreement to the trade treaty of June 3, 1933 adopted the most-favoured-nation clause. Further, Chili granted prefer-

ential treatment to imports of cattle (in particular, 60,000 head of cattle are admitted free each year) and of books; Argentina grants this treatment to dried vegetables, garlic, wood and certain mineral products from Chili.

The third class covers commercial agreements reached with countries holding an important place in Argentina's foreign trade.

1. With Italy (March 4, 1937). A supplementary agreement to the trade treaty of 1894 confirms the application of the most-favoured-nation clause, while a further convention deals with payments. Large quotas are fixed annually for the following Argentine products: wheat, maize, wool, chilled and frozen meat, linseed, etc. To balance this Argentina agrees to pay the official rate of exchange in all payments for goods imported from Italy up to a value equal to that of purchases made by Italy from Argentina. Trade between these two countries has been greatly increased by this agreement.

2. With France (February 18, 1938). An additional agreement to the convention of August 1932 was signed which extends most-favoured-nation treatment to internal duties. It grants Argentina 10 per cent. of the bran quota, 30 per cent. of the quota for maize imported into France under the direct imports system, 30 per cent. of the quota for maize imported under the special system of temporary imports, and the whole quota of maize for starch works, 60 per cent. of the chilled mutton quota, 10 per cent. of the frozen meat quota, 25 per cent. of the tinned meat quota and 10 per cent. of the butter quota. France receives reductions in the duties on her brandies. The clauses dealing with payments give France a type of exchange not less favourable than that granted to other countries. Bills for regular exports of Argentine products into France are allotted, after deducting a reasonable amount, in the following order: towards the public debt, in settlement for goods of French origin imported into Argentina and towards financing French undertakings in Argentina.

3. With Germany. The trade treaty signed in September 1934 has been renewed for 1937 and 1938. Supplementary clauses arrange for the improvement of trade between the two countries and, in particular, payments are facilitated. Import quotas for chilled meat have been substantially increased.

Finally, immigration agreements were reached with Switzerland (July 6, 1937) Denmark (September 21, 1937) and the Netherlands (April 19, 1937 and September 16, 1938). These agreements allow colonization by selected types of immigrant in the sparsely populated districts of the country, account being taken of the interests of each of the signatory States. Apart from these, general measures have been taken from December 1, 1938 which aim at restricting immigration.

Argentina has therefore been pursuing a very active commercial policy for the last two years. To coordinate the work of the different organisations concerned a permanent interministerial commission for economics has recently been formed [Decree of November 29, 1938-December 3, 1938 ⁽¹⁾]. It consists of representatives of the Ministries of Foreign Affairs, of Finance and of Agriculture; it prepares commercial negotiations by studying the home and foreign markets; studies the effects of commercial treaties on the national economy, and keeps the Government informed of commercial developments so as to enable it to take suitable measures.

As regards the customs tariff, not only are imports taxed by a 10 per cent. duty, but from December 1, 1938 (Decree of November 7, 1938) a permit must first be obtained for all imports.

⁽¹⁾ The first date is that of the signing of the decree, the second that of its publication in the Boletín Oficial.

Cereals and linseed.

The output and export of cereals were large during the 1936-37 season but greatly decreased during 1937-38. Prohibitions on exports of flour and wheat were maintained for only a short period. They were introduced in November 1937 but gradually withdrawn as crop expectations showed that there would be no shortage of home supplies of these goods.

To secure more rational use, several decrees (February 14, March 10, 1938 and October 31, November 5, 1938) introduced a classification of flours by which these goods can be employed in the uses to which they are suited. The National Commission for Grain and Elevators continued its operations and the plan for constructing elevators was proceeded with. From January 1, 1939 (Decree October 24-November 2, 1938) 0.02 pesos per quintal of cereals and linseed exported had to be paid into the account of this commission.

In November 1938 the Wheat Regulating Committee was again instructed to maintain cereals and linseed prices. The Committee was formed on November 29, 1933, and is financed by the Exchange Control Commission. It maintained the prices of wheat and linseed till December 1936 and of maize up to January 1937. The rise in prices then made its operations unnecessary. But in 1938 the fall in prices called for further intervention. A Law of October 7-October 17, 1938 permitted the Government to establish minimum prices for wheat, linseed and maize, etc. or to grant subsidies to producers in support of national production. The minimum prices and subsidies, which apply only to the next crop, are fixed so that "costs of producing cereals and linseed in the different parts of the country may be protected". The necessary funds are supplied from the difference between the rates of exchange, and if this is insufficient the National Bank of Argentina makes advances. By a decree of November 14-23, 1938 the basic price per quintal of wheat (No. 2 specific weight: 78) was fixed at 7 pesos, and per quintal of linseed at 13 pesos. On November 4 the prices of the products were respectively 6.05 and 12.62 pesos on the Buenos Aires Stock Exchange.

Meat and cattle.

During the last few years the volume of exports of chilled meat changed relatively little, but there was a considerable increase in output owing to the increase in home consumption. The Government attempted to improve the distribution of this product, and while the National Meat *Junta* continued to function, the "Cattle and Meat Market" Company was formed by a decree of May 31-June 25, 1937. It is in the form of a commercial company whose shareholders must be stockraisers. The shares are personal and may only be transferred with permission of the Company. The Company is run by a Board of Directors who are elected from among the shareholders at the General Meeting. This Company and the National Meat *Junta* work in close cooperation, and the charges for services rendered by the Company must be approved by the *Junta*.

The company sets up, buys and administers cattle and meat markets, refrigerators and warehouses; these establishments enable meat and cattle to be stored, classified and sold under conditions favourable to consumption and conforming to hygienic requirements. Although the home market absorbs a continually increasing part of the national output, the Government has also made efforts to maintain exports. To indemnify beef exporters for the duties that must in future be paid on importing their products into the United Kingdom, they receive provisionally (from January 1937) a

subsidy of 1.65 pesos per pound of beef. The Exchange Transactions Fund pays the necessary sums to the National Meat *Junta*, which then redistributes them.

At the end of 1938 the drought led to an increase in supply and a decrease in exports of meat, so that prices fell. By a decree of December 8-13, 1938 subsidies were granted from December 12, 1938 to March 31, 1939 on the sale of cattle (mixed bred) for immediate slaughter, whether for export or home consumption. This regulation will remain valid until June 30, 1939 for animals coming from the *Litoral Norte* and sold directly to industrial concerns. The *Junta* will receive the money required to pay the subsidies from the Exchange Fund.

Wool.

An advisory Wool Committee consisting of officials and representatives of those interested was formed by a decree of April 26-May 24, 1938. It gives advice to the Ministry of Agriculture on legislative measures, helps to prepare international agreements and suggests to the Institute for Wool Research the lines of its work. To ascertain the quantities of stocks and to take measures required to improve the market, a decree of May 11-28, 1938 made it obligatory to declare periodically to the Institute for Wool Research the quantities of wool on the market, in warehouses and in industrial establishments, etc.

Milk and milk products.

The economic importance of milk products and the fact that milk is a primary commodity led the Government to set up an "arbitral tribunal" to fix the prices of milk both for direct consumption and for manufacturing purposes (Decree of August 19 to 25, 1937). The lack of rationalized production in the milk trade and industry had led to an inequitable distribution of profits. The "arbitral tribunal" fixes equitable prices, prevents conflicts and protects the interests of consumers. The tribunal consists of a Chairman appointed by the Government, two representatives of production, one industrial representative and one trade representative. A Department for the Milk Industry (Decree of February 11-March 10, 1938), has also been formed, which replaces the regulating *Junta* for the milk industry and the independent *Junta* for supplying milk to the capital. This department is concerned with the production, industry, trade and transport of milk products within the country, and with exportation. Registration is obligatory for all persons whose work is connected directly or indirectly with the milk industry. The Department is assisted by an advisory council consisting of officials and representatives of the producers.

To prevent margarine being sold as butter and to ensure that this product is hygienically prepared, production and trade in margarine have been regulated. (Decree of January 15-February 15, 1937). Margarine producers are obliged to register with the Department for Stockraising and they may only carry on their work if their factories fulfil certain hygienic conditions. Further, the composition of the products is regulated and they are marked in a definite manner according to quality.

Wine.

The wine *Junta*, set up by a law of December 24, 1934, has been carrying out its task of ensuring that "the national output of wine does not exceed the normal requirements of the population". Further, a law of January 29, 1937 (February 17, 1937) arranged for the wine *Junta* to acquire vineyards covering an area sufficient to reduce the annual output of grapes by 2,000,000 quintals. Lands bought from vine-growers

pass to the State and are divided up into small holdings, which are then sold to the families of agricultural labourers who must agree not to cultivate the vine. Selling prices are not high and financial assistance from the State enables purchasers to attain independence by means of annual payments.

Thus the vine area is rapidly being reduced. At the time of the 1937 harvest, the area of vines in Argentina had already been reduced by 4,125 hectares, being then only 145,687 hectares.

The same law (January 29, 1937) reinforces the marketing organization for wine so that gluts may be avoided. Each year before June 30, the executive fixes, at the suggestion of the Wine *Junta*, "the annual surplus of wines which should be prevented from coming on to the home markets to avoid exceeding their capacity of absorption". For the current year this surplus was fixed at 2,830,500 hectolitres (Decree of June 29-August 9, 1938). Each vine grower must hand over a certain part of his crop to the *Junta*. The *Junta* may then either sell the wines so bought on the home market if required, or export them, or convert them into derivative products. The law also empowers the *Junta* to take all measures to improve the distribution of this product and to increase consumption (with the assistance of an auxiliary cooperative organization).

In furtherance of these attempts to organize viticulture, the Government passed a series of new regulations in a law of August 12-29, 1938. A central Department for vine-growing and the wine industry, attached to the Ministry of Agriculture, was formed, which "has powers to deal with all matter relating to the wine and vine industry, the supervision of trade and technical inspection". A national Commission for the wine and vine industry, consisting of officials and representatives of the vine-growers submits its views and proposals about measures proposed.

The same law gives a precise definition of the various alcoholic products (wines, ciders, liqueurs etc.) and decides which processes are legitimate and which should be prohibited in the manufacture of these products.

A system by which declarations of harvests are obligatory has been introduced to allow the Central Department for vine-growing to follow market developments. The home trade in wines is very strictly controlled, the import of foreign wines and alcoholic goods being permitted only if certain conditions are fulfilled. The Central Department of the National Chemical Laboratories conducts analyses to ensure that the law is being observed; penalties are prescribed.

There are also many laws regulating the production of wine alcohols and small wines, etc.

There has thus been a great deal of Government intervention; that it has been effective is shown by the rise in prices since 1936.

Red Wine in Tank Wagons at Mendoza.

Indices (1930 = 100)

1934	78.2
1935	83.9
1936	80.7
1937	90.7
1938 (first nine months only)	89.7

Potatoes.

A decree of October 26, 1934 empowered the Ministry of Agriculture to deal with difficulties affecting the potato market. An administrative commission, formed provisionally, to carry out this work, decided to have all transactions centralized. By this means prices and weights of the goods could be supervised, a classification according

to quality introduced and a scientific inspection of sanitary conditions maintained. In future (Decree of January 27,-February 17, 1937) the working of the market will be directed by an official of the Ministry of Agriculture who will apply the regulations. An advisory committee consisting of representatives of producers and dealers gives its opinions and proposals. In case of disagreement with the official directing the market, the Ministry of Agriculture settles the dispute. Thus the separate organizations are effectively supervised.

Encouragement of tobacco production.

The inadequacy of the national output and the high prices of imported tobacco decided the Government to extend the cultivation of this plant. No technical difficulties arise since there are parts of the country where all the conditions required for the successful cultivation of tobacco are found.

A decree of February 5-12 April 1937 determined the organization and functions of the Department for tobacco production. The Department, which is attached to the Ministry of Agriculture, consists of a technical and an economic section. It regulates plantings and fixes the areas in which the different varieties may be cultivated. It prepares statistics, conducts sales research and improves storage and transport conditions. Further, to make supervision stricter, a decree (May 11-28 1938) made it obligatory for all persons concerned with this cultivation, trade or industry to register with the department for tobacco production.

Standardization of agricultural equipment.

A National Commission for the Standardization of Equipment (Decrees of December 14, 1937, October 5-31, 1938 and October 7-31, 1938) proposes to the Government, after consideration, rules for standardizing agricultural equipment. It is assisted by the Institute for the Rationalization of Equipment, an organization for coordinating technico-scientific research.

Fruit trade.

A decree of February 12-to March 10, 1938 regulates all matters relating to the quality, marks of origin, arrangement and packing of dried fruits for the home and export markets. A decree of September 2-7, 1938 laid down similar regulations for imported dried fruits to ensure equality of treatment between the native and imported products.

Campaign against insects and cattle diseases.

Much has been done in the fight against locusts. A research institute, working under the Department of Vegetal Hygiene, was set up (Decree of June 21,-1 September 23, 1937) and has been granted credits amounting to 10,000,000 pesos for the purchase of materials and for preliminary work (Decrees of June 21,-January 13, 1938 and October 7-17, 1938). Prices of metal fences were kept low, so that landowners could buy them easily. Thus the high costs of transport and upkeep which were previously borne by the State have been avoided. (Decree of October 11-November 4, 1937).

The campaign against different types of tick on cattle and domestic animals has been made obligatory in all regions (Decree of October 7-17, 1938). Landowners must attend to the animals on their own farms and use the State equipment. An initial grant of from 4-500,000 pesos has been made and it is expected that in future 500,000 pesos will be paid annually.

Internal settlement.

The lands bought by the State with a view to reducing the output of wine (Law of November 29, 1936) were used, after being cleared of vines, to form small peasant properties. These "enable the family to become attached to the soil and ensure intensive and independent production". A decree of February 17-March 15, 1938 set up, a commission for the administration of settlement lands independent of the Department of Agriculture. This commission divides up the lands into pieces of under 5 hectares and fixes their value. The law determines the conditions which must be fulfilled to obtain one of these pieces.

Farm credit.

The arrangements for farm credits have been modified by several laws and decrees. According to a decree of April 3-6, 1937 no person or institution granting mortgage loans might accept deposits unless it set up an independent section for mortgage operations with separate capital or funds obtained from the sale of bonds. At the request of the National Mortgage Bank, the maximum area for settlement allotments was fixed (Decree of October 26-November 4, 1937) at 200 hectares, and the maximum amount of individual loans to colonists or purchasers at 50,000 pesos. A decree of March 26-29, 1938 allows the National Bank of Argentina to grant loans for the purchase of seed and draught animals to settlers in areas affected by the loss of the last crop. The total amount of such loans must not exceed 9,000,000 pesos. A decree of August 31-September 26 (modifying the law of May 15, 1933) prescribes regulations relating to credit operations, mortgages, and the length and amount of loans. A decree of September 25, 1938 enables stockraisers to obtain credits on easier terms. A law of October 10-14, 1938, supplemented by a decree of November 15-31, 1938, introduces a new system for bonds with a mortgage guarantee.

LIBYA

Libya is agriculturally a region of arid climate. Compared with the total area the cultivated and cultivable parts are few and limited. But despite the infrequent rainfall and the absence of permanent water-courses there is no absolute lack of water owing to underground phreatic and artesian waters. In Cyrenaica these are supplemented by numerous springs, while in Eastern Jebel the rainfall is more regular and plentiful.

However, the only part of Libya which is cultivable, and therefore colonizable, lies along the coast, consisting of the Jefara and the area contiguous to Jebel, in Tripolitania, and of the plateau of the same name and of part of the Bengazi plain in Cyrenaica.

The chief crop in Tripolitania is the olive. Almonds and vines are also important. On the Jebel, in the Tigrinna area, the cultivation of oriental tobaccos is being undertaken on a large scale by means of a colonization plan settling 500 families in the Garian.

At present cereals are the principal crop in Cyrenaica, chief among which are barley and, to a smaller extent, wheat. The natives generally grow these two cereals, the Italians on the other hand preferring olives, almonds and grapes, though they grow some wheat also.

According to the first census of Italian colonists' farms in Libya (April 21, 1937) ⁽¹⁾ which supplied data on certain agricultural aspects of this territory ⁽²⁾, the farms of Italian colonists were distributed thus:

Classification of Farms according to Type of Tenure.

Province	Total		In concession		In full ownership		Part in concession and part in ownership		In State ownership	
	Num-ber	Area: hectares	Num-ber	Area: hectares	Num-ber	Area: hectares	Num-ber	Area: hectares	Num-ber	Area: hectares
Tripoli . .	593	98,429.85	332	86,605.66	235	7,285.30	15	4,249.91	10	288.98
Misurata . .	30	28,580.61	17	27,310.52	11	250.65	—	—	2	1,019.44
Bengazi . .	193	32,443.64	25	19,960.57	156	7,145.36	3	5,073.00	9	258.71
Derna . .	24	28,295.01	11	25,619.98	13	2,075.03	—	—	—	—
Total . .	840	187,749.11	385	159,502.73	416	17,356.34	18	9,322.91	21	1,567.13

A classification by size of the same holdings gives 176 of 5 hectares and under, 227 of from 5 to 20 hectares, 159 of from 20 to 50 hectares, 133 of from 50 to 200 hectares and 145 above 200 hectares.

Of trees, dry and semi-irrigated, olives covered 23,735 hectares, almonds 3,873, vines 1,629, others, 552.

There was also joint production of these trees, 28,419 hectares with olive and almond trees, 8,188 hectares with olive trees and vines, 164 hectares with almond trees and vines, 1,511 hectares with olive trees, almond trees and vines and 2,100 hectares with other trees.

According to the census there were 5,514 ploughs, 1,219 harrows, 971 *mahascic*, 288 cultivators, 279 sowing machines, 180 tractors, 127 mowing machines, etc.

There were 2,097 wells, 656 cisterns and reservoirs with a total capacity of 83,217 cubic metres, and 1,528 basins for collecting water with a total capacity of 623,851 cubic metres.

Many different methods of pumping the water were used.

The farms covered by the census were adequately supplied with dwelling houses, barns, storehouses, cattle sheds, dung hills and silos.

The numbers of livestock were 2,046 horses, 737 asses, 1,299 mules and hinnies, 592 dromedaries, 7,714 head of cattle, 73,202 sheep, 9,199 goats and 1,707 pigs.

Native agriculture is intensive in the *suani*, small irrigated gardens where the water is drawn from the sub-soil by wells. Dates (more than 3 million date palms with an output of from 300,000-400,000 quintals of dates par annum) are the main crop of the *suani*. Barley, the staple food of the native, is the chief cereal crop. The principal industrial crops are tobacco and henna, olives and other fruits coming next.

⁽¹⁾ *Gli Annali dell'Africa Italiana*, 1st year, No. August 2, 1938. Ministry of Italian Africa, Rome. The census was carried out through the offices of the General Government of Libya, the Bureau of Studies of the Ministry of Italian Africa, and the Central Institute of Statistics of the Kingdom of Italy.

⁽²⁾ By the Decree-law of January 9, 1939, No. 70, the four provinces of Libya were annexed to the territory of the Kingdom of Italy. At the same time, Libya retains its own legal character and its financial autonomy. On October 31, 1938 the population of Libya was 846,854, of which 76,804 were Italians and foreigners and 769,960 natives.

Ginanat are important in the more arid areas. Dry crops have to be used, the chief being olives and fruits, including grapes.

Among self-sown plants, *alfa* and *esparto* are important both being utilized for extracting cellulose.

As regards external trade, imports (in million lire) were 398.1 in 1935, 623.1 in 1936 and 623.3 in 1937; exports, 61.1, 107.7 and 122.4.

Of the imports, 87 per cent, come from Italy and consist chiefly (177 million in 1937) of cattle, foodstuffs and tobacco; and (61 million) of textile fibres and their products, etc.

Exports go almost entirely to Italy and consist chiefly of raw hides, raw sponges and wheat.

Colonization scheme.

By a royal decree of May 17, 1938 ⁽¹⁾ Libya is to be colonized by forming small rural holdings. The Government is working out a plan for carrying out this colonization, and decides on the areas to be colonized, the number of farms in each area, and the type of farm best suited to the district. It will also undertake the formation of villages, or "rural centres", the building and maintenance of highways, of water-works, of telegraphic and telephonic communications, etc. Each rural centre must have premises for public services and public utilities, church, school and medical dispensary.

The Institute for the Colonization of Libya and the National Fascist Institute for Social Thrift decide on the distribution of lands and the constitution of small farms, the Libyan Government making free grants from the State territory of lands needed for this purpose. The two Institutes carry out the initial work of land and farm improvement in the 15 colonization districts, by erecting houses and farm buildings for the settlers, and works for supplying drinking water and water for irrigation, by clearing land and by providing the initial supplies of livestock and equipment.

For the five financial years 1937-38 to 1941-42 the Libyan Government will be granted an annual sum of 100 million lire to cover the expenditure arising from the above plan.

In applying this plan 1,800 Italian families, comprising 20,000 persons, have recently been settled in Libya. The majority of the colonists were chosen from small proprietors whose holdings in Italy were insufficient to guarantee subsistence; or from *métayers*; and in exceptional cases from agricultural labourers on condition that they had already been receiving as payment a share in the produce of the land (*compartecipazione*). The families chosen averaged 9 members.

The Libyan Government has equipped 3 villages and constructed 7 others to receive the colonists. The Tripolitanian coast received 1,000 families and the Cyrenaic Jebel 800.

Investigations undertaken during the last few years have shown that these areas are similar in certain respects to the areas from which the colonists came. They are suitable for arable farming and animal husbandry.

The land occupied by small farms is more than 53,000 hectares, and will undergo land and agricultural transformation over a period of from 2 to 3 years on the average, with a maximum of 5 years.

The setting up of the farms is financed entirely by the State, 30 per cent. being paid in money subsidies and 70 per cent. by credits. The loans are interest-free for the first five years; then interests at 2 per cent. is charged for three years. The capital

⁽¹⁾ *Gazzetta Ufficiale del Regno d'Italia*, No. 131, June 10, 1938.

will only be paid off from the ninth year, in 27 annual payments, including interest and amortization. The colonists must also pay a sum, amounting to not more than 1 per cent. of the cost of their own farms, towards general and administrative expenses.

Each farm is provided with a house containing three furnished rooms, with kitchen, shed, stable, pigsty and a well or cistern.

There are three types of farm. Firstly irrigated farms, numbering 410, situated in districts with an average rainfall not exceeding 150 mm. per annum. These have an area of 15 hectares, 10-12 hectares being irrigated, the rest dry. The chief crops will be wheat, leguminous plants and industrial plants (cotton, groundnut, hemp, etc.). The water for the 600 irrigated hectares is supplied from 16 artesian wells. Each well will supply 25-30 farms with a total irrigated area of 250-300 hectares and equipped with a network of canals. The livestock of each farm consists of 6 head of cattle and one mule.

Secondly there are the partly dry farms, numbering 338. They have a total area of 25-30 hectares, 5-6 hectares being irrigated and 20-25 dry. Here the average rainfall is 250-300 mm. The land is distributed between olives (12 hectares), almonds (5 hectares), grapes and olives (3 hectares), irrigated area (5 hectares). Of the last, 1-2 hectares are used for citrous fruits and the remainder for wheat, fodder plants, industrial crops, etc. Livestock is the same as for the first type.

The farms of the third type are not irrigated at all. They are situated in the regions with arid soils on the Tripolitanian and Cyrenaic plateaux, at an altitude varying between 300 and 800 metres. The lack of water for irrigation is compensated by a very abundant rainfall and other climatic factors. Rainfall varies between 300 mm. per annum near Tarhuna (Misurata) and 400 mm. in the Barce region. In the Cyrene area it reaches 600-700 mm.

There are 232 new farms on the Tripolitan plateau, with an average area of 50 hectares. The land is distributed between: (a) trees: olive trees (20 hectares), almond trees (7 hectares), olives and vines (5 hectares) and other fruit trees (0.5 hectares); (b) seed crops: 15 hectares. Livestock consists of 4 head of cattle and one mule.

The new farms on the Cyrenaic plateau, numbering 820, have an average area of 30 hectares, and the land is distributed between: (a) trees: olive trees (7 hectares), almond trees (2 hectares), vines (1 hectare), other fruit trees (0.5 hectares); (b) seed crops (10.5).

This region is the part of Libya best suited to the cultivation of cereals.

The livestock of each of the farms of this region consists of 6 head of cattle and one horse.

On taking possession of the farm the colonist found the land cleared and ready for ploughing for the autumn sowing. He was given a plough and other equipment and certain stores for his personal requirements.

At first the colonists will receive a monthly wage which will decrease proportionately as the farm becomes more productive. When the farm is producing fully, the colonists will be treated as *métayers* for a period of five years, the produce being shared with the Institute of Colonization. They will become owners of their land when the conditions of repayment provided for by the above mentioned decree have been fulfilled.

Reorganization of farm credit.

Farm credit was reorganized by the Decree of May 13, 1937 ⁽¹⁾, which distinguishes between credit for actual farming and credit for improvement. The first covers the ordinary management of farms which are already wholly or partly productive, and

⁽¹⁾ *Gazzetta Ufficiale*, No. 209, September 8, 1937.

in particular the handling and processing of products, the purchase of cattle, machines and farm implements and advances on farm products.

The second class of transactions relates to the permanent improvement of the land. The ends in view are (1) new planting and crops; (2) construction of farm roads; (3) preparation and improvement of land; (4) sinking of wells and establishment of watering-places and fencing; (5) construction and adaptation of rural buildings for farmers, housing livestock and equipment and storing and working up agricultural products; (6) construction of works for drinking and irrigation water and for draining and maintaining the lands; (7) application of electricity to agriculture, adaptation of mountain lands and reafforestation.

Loans for purchasing land to set up and improve small rural holdings are considered as farm credit operations.

The Decree of April 3, 1937 should also be mentioned, which permitted parcels of state land of from 4 to 15 hectares to be granted to native farmers in concession for improvement, the land being ultimately granted freehold. The native concessionnaires may receive subsidies from the colonial Government up to 40 per cent. of the cost of improvements on the lands granted.

Native owners of lands improved in accordance with the instructions given to native concessionnaires of domain lands may also receive these subsidies.

A Decree of August 12, 1937 ⁽¹⁾ authorized the Savings Bank of Libya to increase its resources by issuing special bonds up to 400 million lire, thus ensuring it the funds required to carry out this plan of agricultural colonization.

PORTUGAL

During the first ten months of 1938, the economic situation was much the same as for the corresponding period of 1937. In 1937 certain harvests, and especially the vintage, had been very abundant, while others, wheat, maize, rice, olive oil, had been only medium or poor. In consequence the position of agriculturalists was unsatisfactory: crop surpluses lowered prices to a level at which the grower made very little profit. On the other hand there was some rise in prices due to the small crops as indicated above, but the gross return was not enough to meet the costs of production and in particular the interest on debts. Taking it all round, the effects on the general national economy were unfavourable; thus the trade balance was weighted by the increase in imports and there was an exodus of foreign currency. In 1938 there was an abundant vintage, and the cereal harvests were more satisfactory.

The foreign trade figures for the first ten months of 1938 fall only a little below those of the corresponding period of 1937, which was a record year, and are higher than the figures of the three previous years:

Value of Foreign Trade for the First Ten Months of Years 1934-38:

In thousands of escudos.

	Imports	Exports
1934	1,556,322	674,306
1935	1,601,825	719,674
1936	1,521,858	802,541
1937	1,772,811	970,558
1938	1,630,128	907,857

⁽¹⁾ *Gazzetta Ufficiale*, No. 236, October 9, 1937.

Agricultural exports represent 60 per cent. of the total exports; vine products hold the first place, and forest products the second, as Portugal exports large quantities of cork.

This improvement in trade has meant a progressive improvement in the financial situation. There were budget surpluses of 180,000 contos in 1936, 211,000 in 1937 and 200,000 in 1938.

The price index numbers of crop products, of animal products and of the cost of living during the last three years were as follows:

	Price index of crop products	Price index of animal products	General index of cost of living
1914	100	100	100
1936	2,011	2,051	2,022
1937	2,067	2,168	2,102
1938	1,907	2,115	1,962

All the index numbers thus fell during the first ten months of 1938; the average wages of farm workers, which stood at 7.30 escudos for men and 4.10 escudos for women in 1934, fell in 1938 to 7 and 4 escudos respectively.

Wine.

There was large production of Portuguese wines, both of liqueur wines (Port and Madeira) and of ordinary red and white table wines: the vintage surpluses affected the interests of both vine-growers and of wine-dealers unfavourably. The measures previously taken by the Government to regulate the production, the consumption and the flourishing external trade in these products, were not adequate, owing to the very large production, for protecting the market; exports of wine decreased and prices fell. During the first ten months of 1937, exports amounted to 2,067,725 hectolitres representing a value of 208,195,000 escudos; for the corresponding period of 1938, the volume of exports was only 1,935,000 hectolitres for a value of 194,446,000 escudos. In reality there was no great difference between the two years, but in view of the very abundant vintage of 1938 the position of the vine-growers is not satisfactory, because together with some falling off in demand there is also an increase in unsaleable stocks; the result has been a price decline. To meet this situation the Government has regulated sales, laying down that these shall be in proportion to the wine obtained from the vintage in each case so that all growers may have a fair share of the market.

The main reason for the reduction in demand is to be found in the changes which have taken place on the European markets which consume Portuguese liqueur wines. In addition the ordinary table wines, formerly purchased by Brazil in large quantities, are no longer exported to that country; Brazilian buyers, who have to pay in gold, are not in a position to consign the required gold currency. Hence this type of wine has to be consumed in the country, and as the production is much in excess of the home requirements, there is a price decline.

In view of the importance of her great wine production for the general economy of Portugal, and since wine is the principal export commodity, the Government's policy is one of moderate limitation of production together with an endeavour to find new markets.

Cereals.

Wheat. — The wheat market which was never satisfactory was rendered worse by the short crop of 1938. It became necessary to import almost one-fifth of the quantity required for home consumption, which is about 5,000,000 quintals: during the first ten months of 1938 the imports were precisely 842,299 quintals for a value of 83,000,000 escudos. This large importation was necessitated by the exhaustion of the stocks formed in 1935 and 1936, following on the harvest of 1937 which was also deficitary.

The Government's wheat policy is to increase the area under cultivation, not by rendering such increase compulsory but by fixing a remunerative scale of prices sufficient to encourage the farmer to extend his wheat-growing. With the same object the Government is improving the organisation of credit and is encouraging the use of selected seeds. All the enactments for giving effect to this policy are contained in the Decree No. 28,906 of August 11, 1938 together with a scale of prices in force from that date.

According as the specific weight ranges from 73 to 81, prices vary between 139 and 152 escudos for soft wheat and between 134 and 147 escudos for hard wheat.

The levy of 12 centavos per quintal harvested has been lowered to 2 centavos. In addition a large credit was opened, under the terms of the Decree, at the National Bread Institute for the purpose of making long term loans to farmers to meet the expenses of wheat-growing.

Rice.

Portugal has always been an importer of rice; there has however been a decline in these imports in proportion to an extension of rice-growing. The measures taken by the Government, through the Regulating Commission for the Rice Trade which was set up in September 1934, were exceedingly effective. The annual average production of 230,000 quintals before the creation of this Commission rose to 570,000 quintals, average of the last four years. Actually the first measures taken by the Commission were designed to encourage growers to extend the area under cultivation, with the result that from an average of 10,000 hectares from 1931 to 1934, it rose to 20,000 in 1935 to 1938.

The beneficial results of the Governments measures are still more clearly evident from the import figures. The charge on the trade balance represented by the average import of 330,000 quintals of rice for the period 1931 to 1934 considerably declined as appears from the official import figures for 1937 and for the first ten months of 1938. In 1937 only 37,424 quintals were imported for a value of about 4,000,000 escudos, and for the first ten months of 1938, only 26,595 quintals for a value of 2,500,000 escudos.

This striking development is to be explained not only by the Government's measures, but also by the fact that higher profits accrue to Portuguese farmers from rice-growing than from the cultivation of other cereals; the very remunerative selling prices have continued to rise and the present market prices vary around 3 escudos per kilogramme for rice of first quality and 2.80 escudos for rice of second quality.

Olive oil.

Since the formation of the National Oil Council at the end of 1937, the oil market has been brought under a system of planned economy. This step was taken by the Government with the object of increasing production and controlling extraction and thus preventing the sale of olive oils not entirely pure.

With a view to checking the sale at low prices of the new oil by small growers who are compelled to sell to meet the costs of production, the Government has placed at the disposal of the Council the sums required for granting credits up to a maximum of 350 escudos for each 100 litres of oil. The loans are at 6 per cent. interest, and amortisable in six months.

In consequence of the exceptional olive harvest of 1937, *viz.*, 970,600 quintals, or almost double the average of the last five years (543,000 quintals), the prices in October 1938 were lower than those of the corresponding month of 1937. But the very short new crop, which according to calculations is only about 350,000 quintals, will undoubtedly result in a rise in prices.

NEW PERIODICALS RECEIVED BY THE LIBRARY OF THE INTERNATIONAL INSTITUTE OF AGRICULTURE for the first quarter of 1939 (*).

AGRICOLA; revue... du commerce agricole & horticole. Fédération nationale des unions professionnelles des négociants belges en fruits, légumes, pommes de terre et primeurs. Bruxelles, n° 1 (1938) - mens. 40 fr. int.; 15 b. étr. [Text and subtitle also in Flemish].

AGRICULTOR puertorriqueño. Asociación de agricultores de Puerto Rico. San Juan, v. 18 (1938) - mens. \$ 2 int.; \$ 3 étr..

AGRICULTURE; revue mensuelle technique et économique [publiée par les Ingénieurs agricoles]. Paris, v. 3 (1939) - mens. 40 fr. int.; 50 ou 60 fr. étr.

AUSTRALIAN forestry; the journal of the Institute of foresters of Australia. Perth, v. 1 (1938) - sem. 15s.

AUTARCHIA alimentare. R. Azienda monopolio banane. Roma, Tumminelli & C., v. 1 (1938) - mens. L. 60.

BOLLETTINO della Federazione fascista mutue di malattia per i lavoratori agricoli. Roma, v. 1 (1937) - mens. L. 30 int.; L. 50 étr.

BULETINUL demografic al României; publicație oficială a Institutului central de statistică din Ministerul internelor. București, v. 1 (1932) - mens. Lei 120. [Demographic bulletin of Rumania; official publication of the Central institute of statistics of the Ministry of the interior].

BULETINUL prețurilor. Institutul central de statistică. București, v. 1 (1937) - mens. 200 lei. [Bulletin of prices. Central institute of statistics].

BULLETIN bimensuel d'études et d'informations économiques et financières. Service économique yougoslave. Belgrade, v. 2, n° 22 (1938) - 800 din. int.; 100 fr. suisses étr. [Mimeographed].

BULLETIN de la Fédération nationale des coopératives de stockage, de vente et de transformation des céréales. Paris, n° 1 (Juillet 1938) - mens. 15 fr.

(*) *List of abbreviations:* bihebd. (biweekly); bimens. (twice monthly); bimestr. (every two months); déc. (every ten days); étr. (foreign price); fasc. (copy); heb. (weekly); int. (home price); irr. (irregular), mens. (monthly); n° (number); N. S. (new series); p. a. (per annum); q. (daily); sem. (half yearly); s. (series); v. (volume); trim. (quarterly).

N. B. — Between brackets [/] are given translations and explanatory notes not appearing in the title of the review.

- BULLETIN des marchés réglementés de Marseille; organe d'information de la Bourse de Marseille, v. 9 (1939) - hebdomadaire. 25 fr. int.; 35 ou 50 fr. étr. [Supplement: "Bulletin mensuel de renseignements et statistiques".]
- BULLETIN du syndicat des exportateurs français d'Indochine. Céréales, graines et produits divers... Paris, v. 1 (1938) - mens. 150 fr. int.; 200 fr. étr.
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WORLD AGRICULTURE IN RECOVERY AND RECESSION

(1936-37 AND 1937-38)

Below we give a brief outline of the contents of The World Agricultural Situation in 1936-37 and 1937-38 just published by the Institute in English, French and German. In the present article the reader will naturally find only brief indications of the principal developments of the period under review, and for statistical and other details he is referred to the volume.

I. — Agricultural production and the supply of agricultural products.

The two years 1936-37 and 1937-38 have seen marked changes in the world agricultural production.

The year 1936-37 was the third in succession during which the world crops of the principal cereals were below the average. Stocks had to be drawn upon to make good the deficiency in current supplies. After the succession of good crops which lasted till 1933-34, and which had largely contributed to the agricultural depression of 1929-32, there began a succession of lean years. In 1933-1934, frosts and droughts reduced the principal cereal crops in the United States and in Canada and inflicted heavy damage upon stock and dairy farming in North America. But the losses there were compensated by good crops in other parts of the world. In 1934-35, the whole world was affected by the failure of the cereal crops; and the cotton crops were also poor in all the principal exporting countries—the United States, India and Egypt. Animal husbandry was also affected by the shortage of fodder. In 1935-36, weather conditions were again unfavourable to crops throughout the world. The cotton crops, however, were good, especially in Egypt. In 1936-37, weather conditions were again unfavourable to cereals, and most other food and fodder crops also suffered; especially in the so-called "importing" countries of Europe. The cotton crops, however, were again very good, and the production of cotton in new regions continued to expand.

The year 1937-38 marked a radical change in the situation as, in spite of adverse weather in some of the principal countries, it was a year of great plenty. This was partly due to the extension of the area sown, which, in some countries, was very considerable, and partly to high unit yield in those countries where weather conditions happened to be favorable. The world production of the principal cereals was abundant. As to cotton, both the area and the production of fibre in 1937-38 reached record figures.

As a result, while, during the preceding two or three years the stocks of the principal agricultural staples had been decreasing, in 1937-38 they began again to increase. This sudden change in the supply of agricultural products had a far-reaching effect upon agricultural prices and upon the world agricultural situation generally.

II. — General economic background of the agricultural situation.

The economic revival, which was so marked a feature of the world situation in 1935-36, has since pursued a somewhat chequered course. Increasingly stimulated by rearmament, it developed into a typical boom during the autumn and winter of 1936-37; but in the spring of 1937 a reaction set in. The recession began in the United States and then spread over the greater part of the world.

The upswing.

The autumn of 1936 was marked by an important monetary and economic event, the Tripartite Agreement of September 25, 1936 between France, Great Britain and the United States. The three Governments announced their intention to co-operate in the restoration of international economic relations, an essential condition of such co-operation being the devaluation of the French franc, with a view to bringing it into "alignment" with the currencies of the two other parties to the agreement.

Belgium was the first country to adhere to the agreement. Switzerland and the Netherlands followed immediately. Early in October Italy devalued the lira. Devaluations were also effected in Latvia and Czechoslovakia. The devaluation brought with it a tendency towards the mitigation of tariffs and trade restrictions, which was one of the objects of the Tripartite Agreement. This mitigation was made possible by the alignment of currencies, but it was largely dictated (in the devaluing countries) by the need to prevent an excessive rise in commodity prices and in the cost of living.

Though, in itself, devaluation could naturally exercise only a passing influence upon the economic situation, combined with other forces already in operation it gave a considerable impetus to economic expansion alike in the countries directly concerned and in the international field.

The deflationary pressure was largely eliminated, and a certain impulse was given to a rise in commodity prices, more particularly in those countries which had lagged behind in the general progress towards recovery. The reductions in tariffs and the removal or mitigation of trade restrictions gave some much needed encouragement to international trade, especially in raw materials and in foodstuffs.

All this contributed to the rise in commodity price and the rapid expansion in industrial and trading activities which distinguishes the last quarter of 1936. The rise in prices was not wholly due to the monetary change; there were other forces at work in the same sense. The world supply of the princi-

pal foodstuffs in 1936-37 was short of requirements, so that a rise in their prices was natural enough. Moreover, the crops having failed in some of the industrial countries of Europe, as well as in the United States, these countries had to increase their imports, thus contributing to the expansion of international trade in agricultural products. At the same time industrial expansion, largely due to accelerated rearmament, made increasing demands upon raw materials which had to be imported in larger quantities, thus tending to swell the turnover of international trade.

With the expansion of industrial activity and the rise in commodity prices, specially marked in the group of producers' goods, there was a strong inducement for the manufacturing industries and for speculators to build up reserves of raw materials against future contingencies. This, in its turn, tended to increase international trade in basic commodities and to raise their prices.

Through increased employment and higher wages, the aggregate purchasing capacity of the masses increased, and the inflationary tendencies inherent in the expansion came into operation.

Thus, in the course of the winter of 1936-37 the economic revival developed into a typical boom.

The industrial expansion, by increasing the demand for primary products, particularly benefited the agricultural and raw material producing countries. These increased their exports and obtained higher prices for their products, and the boom brought them large profits.

The recession.

In the spring of 1937 signs of a change in the situation began to appear. A regression set in, giving rise to widespread fears of a fresh depression.

The rapid rise in commodity prices, backed as it was by inflationary influences, began to cause uneasiness in the United States, where it was feared that its progress would compromise the Federal Government's programme of industrial recovery.

The raising of the legal reserve requirements of the banks and the "sterilisation" of incoming gold which, being kept under lock and key, was not permitted to affect circulation, were resorted to in order to stop the inflation. Moreover, further deflation was achieved by a substantial diminution of Federal Budget expenditure.

The accentuation of deflationary tendencies in the United States after the raising of the legal reserve ratio of the banks and the declaration of the Federal Government's decision to combat inflation brought about the liquidation of speculative holdings in the principal products, and thus started a reaction in the United States and elsewhere.

Agricultural conditions also contributed to the reaction in prices. In the spring, when the prospects of the 1937 crops began to take more definite shape, and bountiful harvests were forecast in most parts of the world, there was a natural reaction in the prices of cereals and of other agricultural products. The reaction was particularly heavy in cotton.

In the United States the reaction began in April. In July prices recovered slightly under the influence of an expected revival of business due to exceptionally good crops and to the improved financial position of the farmers.

This rise in wholesale prices, however, was very short-lived, and a fresh reaction began in August.

In September, the month during which the prospects of the year's business in the United States generally take shape, the slackening in the booking of orders began to attract attention, and measures were taken with a view to reviving industrial activity.

The Federal Reserve Board reversed its deflationary policy, inaugurating a series of interventions by the Federal Government which, throughout the autumn, winter and spring of 1937-38, sought to revive industry and trade by the pumping of money into circulation and the creation of work for industries and the unemployed. These measures, however, were exceedingly slow in taking effect. The recession continued, though at a somewhat reduced rate, into the summer of 1938.

Then, in June a spectacular improvement on the stock market took place and signs of a change in business conditions in the United States began to appear. Since the summer of 1938, industrial activity in the United States has recovered considerably, but the agricultural depression has continued.

Though the effects of the recession in the United States were probably most clearly marked in Great Britain, practically all countries felt the impact of the American business slump to a greater or lesser extent. Even those countries which are making every effort in order to achieve economic independence from the rest of the world, have not been able completely to escape these influences.

Like the recovery of 1934-37, the recession in the first half of 1938 was practically world-wide, differing as between one country and another only in intensity.

In the "new" countries, dependent upon exports of foodstuffs and raw materials the effects of the recession have been very pronounced. The reaction in commodity prices, due to the recession and to bountiful harvests in 1937-38, brought about a considerable deterioration in their economic and financial position.

The immediate effect of these changes naturally affected the liquidity of the credit position of the "new" countries, which was to some degree restored during the preceding period of revival, and encouraged a recrudescence of trade restrictions.

Influence of general economic conditions upon agriculture.

The nature of the revival in agriculture and the factors to which it was due have been discussed in some detail in *The World Agricultural Situation in 1935-36* ⁽¹⁾. Among the recovery factors we singled out natural conditions, Government intervention and industrial expansion as the most important.

⁽¹⁾ *The World Agricultural Situation in 1935-36. The Factors of Recovery in World Agriculture*, pp. 21 sq.

The influence of the general economic revival upon agriculture was clear and needs little elaboration. Any complications that there were arose out of the nature of the industrial expansion, largely based upon two artificial factors: rearmament and Government intervention in favour of agriculture, which increased the purchasing capacity of the agricultural population. These were inflationary factors, making the revival precarious and necessitating a close watch over the situation; more particularly over the changes in the price-costs ratios in agriculture, as well as in other branches of production.

At the time when our last survey was being written, in the spring of 1937, the recession had not yet started, and the immediate outlook was for the continuance of an inflationary boom. Since then, the recession has of course changed the situation, if not perhaps so radically as might appear at first sight.

In considering the actual and potential effects of the present recession upon agriculture, and in comparing them with those of the last great depression of 1929-32, we should always bear in mind the profound structural changes which have taken place in agriculture since then. The depression of 1929 found agriculture still on the whole organised on competitive lines, both nationally and internationally. In spite of certain measures of protection, moderate by present standards, international trade in agricultural products was still conducted on the basis of relative costs. Everywhere agriculture responded to outside influences much more readily than it does now, when in most countries it is subject to deliberate planning and control behind elaborate defensive barriers of tariffs, quantitative restrictions and exchange regulations.

During the brief period of revival, Government intervention has not been abandoned, and agriculture entered into the present recession protected and controlled as never before. Accordingly, the various effects of the recession in agriculture are less clearly pronounced and less uniform than was the case in former depressions.

The general economic situation affects agriculture mainly through its influence upon the effective demand for foodstuffs and, particularly, for raw materials of agricultural origin. Apart from changes in supply and from monetary factors, the prices of agricultural products are mostly determined by the demands of industry and of the mass of consumers whose incomes are derived from industry and trade.

The effects of the increase in supplies, owing to the exceptionally good crops of 1937, should first be taken into account. The fall in agricultural prices should be only partly attributed to the recession, and to the consequent decline in actual or anticipated demand. Indeed, the recession, except in the United States, had not yet brought about any marked diminution in employment or earnings. Accordingly, in this phase, the forces working for a reduction of effective demand had not yet come into operation, at least in so far as foodstuffs were concerned. It was rather a case of increased supply on a market where the demand was static, with prospects of diminution. With regard to raw materials of agricultural origin, and particularly cotton, the situation was different. A reaction in the cotton industry, resulting in a reduced demand for

fibre, had set in in the spring of 1937. The record American crop of 1937 thus came on a falling market. The situation was further aggravated, since the beginning of the conflict in China, by the contraction of Japanese production of cotton goods, and of imports of fibre.

While the reaction in foodstuffs was mainly due to increased supplies, agricultural raw materials were sharing the fate of most other raw materials. Apart from the influence of supplies, which in the case of cotton was exceedingly important, the reaction in raw material prices was caused by declining demand, which, in its turn, while mainly due to the enormous contraction of industrial activity in the United States since the beginning of the recession, was partly accounted for by the shifts in the industries, accompanying the concentration of industrial resources upon rearmament and involving the shrinkage of certain branches of production. Finally, the current demand for raw materials has to some extent been met, since the beginning of the recession, out of the stocks laid in during the boom, in anticipation of a continued rise in prices and of eventual inflation. During the past twelve months or so, the existence of these stocks tended to restrict buying.

III. — International economic relations.

Changes in international trade.

The economic revival which began in 1934 was very slow in making itself felt in international trade. It could hardly be otherwise in a world where economic self-sufficiency in essentials was becoming a watchword.

The political and economic situation of the world during the period under review favoured the progress of economic nationalism rather than a return to closer international co-operation. Far from improving, the international political situation deteriorated continually in 1936, 1937 and 1938. Military and political factors have tended increasingly to outweigh economic considerations.

A combination of special circumstances was thus needed to overcome the inertia of international exchange. The combination became operative in 1936-37.

Among the factors which stimulated international trade, the cumulative effects of the recovery in industrial production and earnings, which was by then in its third year, should be put first. The alignment of currencies in the autumn of 1936 and the subsequent relaxation of trade restrictions and exchange control, together with the effect upon commodity prices of the increase in gold supplies, all favoured an extension in international trade. The trade in agricultural products, in particular, increased owing to the failure of crops in North America and elsewhere. The United States, became an importer of cereals and greatly increased her imports of oils and fats while European imports of foodstuffs were larger than usual, as the crops were poor. Thus, by the time economic expansion reached the boom stage, in the late autumn and winter of 1936-37, international trade had also progressed considerably, making good much of the lag with which it had been following the expansion of industrial activity. In

1936-37 both the volume and the gold value of world's trade made great progress, reaching nearly the 1929 record.

As the recession spread over the world, international trade began to be increasingly affected. Old contracts, made during the boom, were running out, and the diminution of United States demand began to tell on the volume of trade, while its value was affected by falling prices. Outside the United States, the effect of large purchases of raw materials during the boom, in anticipation of rising prices, was that production was largely run on accumulated stocks. When these were exhausted, no restocking on a large scale took place, and purchases were made strictly within the limits of current needs, as is always the case on a falling market. The recession thus followed its natural course and its effects were cumulative. The process of contraction first became evident during the last quarter of 1937, continuing into the summer of 1938.

While the demand for raw materials, in spite of the exceedingly heavy consumption due to rearmament orders, has slackened considerably, the agricultural situation also helped to reduce international trade. Not only in the United States, but also in Europe, the 1937 crops were generally good, and the demand for imported foodstuffs diminished. Among the manufacturing industries, the textiles, and more particularly cotton, were less active, partly owing to the recession, partly as a result of the diversion of labour and means of production to the armament industries. In the United States, and to a lesser extent in the United Kingdom and Japan, there has been a decline in textile output, and the industrial consumption of cotton has fallen. Practically over the whole field of international trade, in spite of intensified rearmament, all the signs have been pointing to further contraction. Early in 1939, it would appear that this contraction has been checked, owing mainly to the revival in the United States.

Commercial policy during the revival and the recession.

Commercial policy during the period under review generally followed the course which had been traced in the preceding few years. International economic relations were being reorganised to fit them into the framework of a world economy split into a large number of national economies planned and controlled independently. This involved a far-reaching transformation of the structure and operation of international economic intercourse. Competition was largely being replaced by bilateral contractual relations. Commercial policy reflected the struggle proceeding between economic nationalism, culminating in autarchy as an ideal, and international economic co-operation, involving a growing dependence of all the countries upon each other. In this struggle, as we have pointed out before, nationalism has so far been the winner, and in the recent evolution of commercial policy this was clearly reflected, in spite of certain steps toward freer trade which have been taken during the last two years.

Among the steps in this direction, the further progress in the carrying-out of the United States trade reciprocity programme, the Tripartite Monetary Agreement and the Oslo Agreement should first be mentioned.

Apart from these deliberate attempts at mitigating restrictions upon international trade, there were numerous isolated cases of reduction or abolition of such restrictions by autonomous national action. In these unilateral actions some are inclined to see evidence that the tendency towards international co-operation is successfully asserting itself against nationalism. If, however, we examine more closely the nature and extent of such apparent concessions to economic liberalism, we cannot fail to see that, however important they may be, these relaxations have nothing to do with the promotion of international co-operation.

Under such conditions, any movement towards freer international trade, even if for a time it found some encouragement in the upswing of economic activity, could hardly survive a recession. Once again, with the dwindling of demand and the fall in commodity prices, there has been a return to conditions resembling those which, during the depression, led to an outbreak of extreme protectionism.

Certain relaxations made during the boom with the object of assuring an adequate supply of raw materials for the armament industries, in anticipation of a possible shortage and of rising prices, were now abandoned. As the political situation had been going from bad to worse, economic nationalism was in the ascendant. The only notable exception was the continued negotiation of reciprocity agreements by the United States. The Oslo Agreement, which lapsed in the summer of 1938, has not been renewed. The numerous bilateral trade and clearing agreements signed during these last two years, furthering trade between the contracting parties and to that extent adding to the turnover of international trade, are essentially instruments of the modern contractual organisation of international economic relations.

Clearing agreements, however, have of late been assuming less restrictive forms leading to a certain redistribution of international trade, if not actually to an increase in its volume and value. This tendency consists in the increasing adoption of what had come to be known as "payments agreements" in substitution for clearing agreements proper. Under this system, originally adopted in the Anglo-German Payments Agreement in 1934, and applicable as a rule to trade between a country with exchange control and a country with free exchange, the former is free to dispose of the balance of the sums accruing to its credit in the latter, on condition that a specified proportion of these sums is spent on purchases from the importing country. Thus a certain freedom is allowed to the countries with controlled exchanges as regards the choice of the markets in which to buy.

Being accompanied by a tendency on the part of countries with controlled exchanges, whose trade is often diverted by clearing agreements into unnatural channels, to increase their intercourse with free exchange countries, this development may have a certain importance. It involves the return, within a limited scope, to triangular trade, which in the course of the last few years has been by way of being ousted by bilateral trade relations. The possible effects of this development upon the general future of international trade should not, however, be exaggerated, as under present conditions, it is frequently due to special circumstances.

Since the summer of 1937 there have been numerous cases of increasing import duties.

Apart from tariffs and direct restrictions upon imports, exchange control has a great influence upon international trade. Here also, the alignment of currencies and the general improvement in the economic situation before the recession, had brought about some relaxations, and in 1936-37 international trade was somewhat less handicapped in this respect. The recession, so far, cannot be said to have caused any general recrudescence of exchange control, though some countries have been compelled by special circumstances to tighten up their exchange regulations. This was particularly true of Latin America, owing to the deterioration of its trade balance.

In conclusion it may be said that the evolution of commercial and exchange policies proceeded empirically, particular situations being met as they arose. On balance, as is to be expected during a recession in economic activity and prices, the trend has been towards restriction. However, some developments in the other direction which originated during the revival, such as the United States reciprocity policy and the substitution of payment agreements for clearings, have continued.

Structural changes in international trade.

In the course of the last few years the structure of international trade has changed profoundly.

On the one hand there has been a further extension of bilateral trade on a contractual basis at the expense of competitive international trade. Bilateralism, necessarily combined with a drastic restriction of free competition in international economic relations, is the outstanding characteristic of the new structural evolution of international trade.

The other aspect of the structural evolution of international trade during the period under review concerns the changes which have been taking place in the currents of trade between the different countries and continents.

As the most important and characteristic of these developments we should first mention the extension and consolidation of preferential economic relations between certain European industrial countries and their overseas empires; second, the constitution of certain regional economic blocs promoted by considerations of political and economic solidarity.

The two outstanding causes of the extension and consolidation of economic relations between European countries and their overseas empires are those of the British Commonwealth and of France and her possessions.

In the total of British trade the share of the Dominions increased continually at the expense of that of "other countries", and when in 1937 the turnover of the United Kingdom's trade at last showed a noticeable increase, the share of the Empire remained considerably above what it was in 1929.

The year 1937 was one of recovery for British trade, and the recession was not reflected in the turnover of the United Kingdom's foreign trade until the beginning of 1938. The decline in 1938, especially in exports, has been consi-

derable. It is too early, however, to estimate the influence of the recession upon trade between the United Kingdom and the other countries of the Empire.

The share of French colonies and possessions in the total trade of France increased continually until 1937. In 1937, the share of the colonies in both French imports and exports diminished considerably. This was due partly to the increase in the trade with foreign countries, largely caused by rearmament needs, and partly to the effect of severe failures of crops upon the volume of exports from French North Africa.

The formation of regional blocs is one of the most important and characteristic developments of modern times, both economically and politically. The political geography of Europe was revolutionised by the Great War, and solutions have had to be sought for the many economic problems created by the redrawing of the political map. The position was particularly difficult in Central and Eastern Europe, where a vast network of new frontiers now cut across regions which in the past had for centuries been parts of the same economic body. Numerous schemes have been put forward and tried with a view to mitigating the situation, which in some cases proved practically unbearable. The economic depression, which was itself partly due to the dislocations produced by the War and the peace treaties in European economy, gave a powerful impetus to the movement towards regional economic agreements. The development in this direction was further stimulated by the rapid extension of national planning which was accompanied by an accentuation of the trend towards economic autarchy. The economic basis of the political and military power of the leading European countries had to be extended by regional understandings with neighbouring countries whose economic resources were complementary to their own. For the lasting success of such regional understandings it was essential that, apart from all considerations of political solidarity, the countries concerned should be able to supplement each other's deficiencies. The developments of these last few years have amply demonstrated the truth of this statement, and it is along these lines that the reorganisation of economic relations in Europe is now mainly proceeding.

Regional economic understandings have been embodied in formal agreements, bilateral or multilateral; or have been more or less implicit in schemes of political alliance or co-operation. To the latter type, based on political solidarity, belonged the economic co-operation since the depression between the members of the Little Entente—Czechoslovakia, Romania and Yugoslavia. This attempt at supplementing political with economic bonds failed, however, to solve the fundamental economic problem of the Little Entente—to dispose under favourable conditions of Romania's and Yugoslavia's large surplus of agricultural products. Economically, they could not help eventually being drawn into the orbits of other countries whose pull was stronger.

Somewhat similar was the case of the so-called Oslo group in Northern Europe, consisting of Sweden, Norway, Denmark, Finland, the Netherlands and the Belgo-Luxembourg Economic Union. All these countries have important political interests in common, and this inclines them to economic co-operation, which was attempted in the Oslo Agreement of 1937. The agreement was, on

the whole, unsuccessful and was allowed to lapse. Owing to the essential economic likeness of the signatories, their trade with each other is exceedingly limited and they are vitally dependent for both supplies and outlets upon their economic relations with countries outside the Agreement.

While some of the schemes of regional economic co-operation failed, because the countries concerned did not possess the requisite characteristics for such co-operation, a far-reaching process of economic reorientation has been going on in Central and South-Eastern Europe during the last few years. Two centres of economic gravitation have increasingly asserted themselves since the depression in this part of Europe, whose economy was profoundly dislocated by the territorial changes following the Great War. One of these two centres, whose power of attraction is particularly great and is supported by a long-standing tradition of commercial leadership in this region, is Germany. Her own economic requirements, as well as those of the agricultural and raw material exporting countries to the south-east of her, made the development of co-operation between them practically a necessity.

Under such conditions it was natural that the expansion and consolidation of Germany's economic relations in Central and South-Eastern Europe, should have begun as soon as that country, after 1925, recovered the control of her commercial policy. They were intensified after the depression, first by a system of bilateral trade agreements, and later by clearing arrangements.

The other centre of gravitation is Italy. Her influence has been spreading of late over the south-eastern countries of Europe, in the Balkans and the Near East. Although in consequence of Sanctions, trade relations with Italy suffered a setback in 1935 and 1936, particularly in the Balkans and the Levantine markets, in 1937 there was a certain recovery. Italy's position in the south, as a country with very considerable manufacturing industries in need both of raw materials and of markets, is much like that of Germany in the centre of Europe; the gravitational forces in operation in the two cases are essentially similar.

One of the most important developments in world trade during the last few years has been the change in its distribution between the different continents. This is due to numerous causes, the most important of which, in the long run, has been the course of economic development in different parts of the world. The aggravation of restrictions upon trade and of exchange control have also diverted international commerce into new channels.

The outstanding feature of the change in the inter-continental distribution of world trade since the depression has been the decline of the share of the two most industrially developed continents—Europe and North America—in the total turnover of commerce. Between 1929 and 1936 this decline was clearly marked. The accelerated rate of economic revival in 1936-37, culminating in the boom, had the effect of increasing the shares of both Europe and North America in world imports: a natural consequence of industrial expansion involving larger imports of primary products. This break in the downward trend of the share of these continents in world commerce, however, was entirely accounted for by the industrial boom, and it is not likely to bring about a reversal of trend.

It is very difficult, however, to draw any definite conclusions from any changes that may have taken place in the intercontinental distribution of trade during the period under review. Political conditions during the last two years have been so unsettled that trade currents were bound to be diverted from their normal channels. Thus, the present situation in the Far East obviously affects the trade of Asia, and by altering Asia's share in the total trade of the world unavoidably affects the shares of other continents as well. The effects of the protracted conflict in China are naturally cumulative, and in 1938 they were more pronounced than in the second half of 1937, immediately after the outbreak of hostilities.

In dealing with the intercontinental distribution of trade, we must therefore distinguish between the undercurrents of real change due to economic causes of a permanent character, and surface waves which—although sometimes violent—do not reach deep enough to alter the main tendency.

World trade in agricultural products.

The depression of 1929-32 brought a great decrease in international trade in agricultural products. The world's net exports of wheat, for example, during the years 1933-34 to 1935-36 averaged barely two-thirds of the 1926-27 to 1930-31 average.

In 1936-37 *wheat* exports showed a marked increase, due to the influence of short crops in both the European importing countries and in the United States, this latter country, instead of exporting wheat, having been for three years running a large importer of that cereal. In 1937-38, with the United States having again a large exportable surplus, and the European crops being good, world wheat trade dropped again roughly to the low average of the three years preceding 1936-37. Among European importing countries, in 1936-37 and 1937-38, Germany occupied an outstanding position, her wheat imports having increased enormously as compared with the previous years.

The turnover of trade in *maize* increased considerably in 1937, the increase being due partly to larger production in Argentina, South Africa and Yugoslavia, partly to a great increase in the imports of the United States, where the crop was very poor, and an enormous increase of German imports. In 1938, Argentina's export surplus was under one-third of that of 1937, but the United States had a large surplus which, combined with those of Yugoslavia, Hungary and South Africa, partly made good the deficiency. Germany's imports continued to increase in 1938, thus helping to maintain the demand, but on the whole the world maize trade diminished compared with 1937.

Of other products, *agricultural raw materials* call for special mention. The cotton trade suffered from the recession in the United States and the conflict in the Far East, and the increased surplus of fibre came on a contracting market, with the result that, in 1936-37 and 1937-38, trade was slack and prices were depressed. The country which was most affected was India, whose cotton exports to Japan have greatly diminished since the beginning of the war in China. The United States share in the world's cotton exports increased considerably in 1937-

1938, mainly owing to the diminution of the exports of the two other principal exporters—India and Egypt.

Another product much affected by the industrial situation in the United States—especially by the revival and the subsequent recession—was *rubber*. To meet the growing demand in 1936-37, the International Rubber Committee, established in 1934 for the control of the world rubber market, raised the export quotas from 60 to 90 per cent. of the basic figures in 1937; but since the recession in the United States it had to make several successive reductions, and for the third quarter of 1938 the quotas were fixed at a low record of 45 per cent., in order to check the headlong decline in prices.

IV. — Agricultural prices and incomes.

Trend of agricultural prices.

In the table on the following page a comprehensive picture is given of the evolution of gold prices of the leading agricultural products during the more advanced phase of the recovery, the boom and the recession.

The effects upon agriculture of the revival and the subsequent recession are clearly seen from this table: in particular the change in the position of countries dependent upon their agricultural exports, in face of so rapid a reversal in the price situation. If the evolution in price relations since the recession is borne in mind, the seriousness of the situation becomes even clearer. Mainly owing to abundant production, the decline in agricultural prices since the recession was more pronounced than that in the prices of manufactured goods and of services, so that the terms of trade turned heavily against the agricultural exporter.

The country where the change was particularly marked, was the United States. The change from the situation in 1936-37, culminating in the boom, to that of 1937-38, after the recession and the complete reversal of the agricultural balance, was reflected in the passing of the Agricultural Adjustment Act of 1938, which has for its object the solution of the same problems of over-production and of the "farmer's dollar" as the original A. A. A. of 1933. These problems had for a time, owing largely to natural conditions, lost much of their urgency; now they again came to the fore.

Most Latin American countries were suddenly faced with a deterioration of their trade balances, and had recourse to stricter control of imports and exchange dealings.

For the agricultural exporting countries of Europe, the position was somewhat eased by the continuous development of their contractual trade relations, and some of them, in spite of the general recession, closed the agricultural year 1937-38 with a balance on the right side.

The operation of the various schemes of international regulation of the market of certain commodities, also reflected the change from revival to recession. This was the case particularly with rubber, the export quotas having

been halved during 1937-38, to meet the fall in United States demand. The international control of the wheat market had been in abeyance for over two years, but in 1937-38 a movement was set on foot for its revival. The International Sugar Agreement signed in London in May 1937, just at the beginning of the recession, was apparently effective in improving the conditions of the world sugar market in 1937, but in 1938 prices collapsed again, and by the close of the agricultural year 1937-38, export quotas were reduced considerably.

Prices of Agricultural Products.

(Gold francs per quintal.)

	1935 2nd half	1st half	1936 2nd half	1st half	1937 2nd half	1938 1st half
<i>Wheat:</i>						
London, Manitoba No. 1.	11.34	11.00	14.05	17.06	18.28	16.93
Chicago, Hard Winter, No. 2	12.53	11.88	13.71	15.22	12.41	10.38
Buenos Aires, Barletta . .	8.31	10.33	11.40	12.81	14.35	11.35
Berlin, Home-grown . . .	24.76	25.86	25.11	25.68	25.07	25.62
Paris, Home-grown	17.06	19.34	23.68	21.15	19.23	17.81
Milan, Home-grown	26.61	28.57	24.85	20.15	22.22	22.49
<i>Rye:</i>						
Minneapolis, No. 2	5.79	6.45	10.61	13.11	9.22	7.85
Warsaw, home-grown	7.26	7.99	9.73	14.31	13.99	12.50
<i>Barley:</i>						
Minneapolis, fodder No. 2.	5.53	5.04	10.97	10.81	7.76	7.64
Antwerp, Danubian	7.45	7.82	10.04	11.74	11.22	11.10
<i>Oats:</i>						
Chicago, White No. 2 . . .	6.92	6.56	9.67	11.13	7.38	6.79
Buenos Aires, White No. 2.	6.26	6.43	6.04	6.55	6.28	6.63
<i>Maize:</i>						
London, La Plata Yellow.	5.47	5.92	7.71	8.73	9.63	9.59
Chicago, Yellow No. 3 . . .	9.16	7.48	12.88	14.62	10.16	7.01
<i>Beef, Argentine chilled, London</i>						
	80.85	77.10	82.78	84.10	92.08	91.07
<i>Mutton, Argentine chilled, London</i>						
	54.89	63.05	60.74	60.91	62.50	61.48
<i>Bacon, Danish, London . .</i>						
	131.06	138.01	142.87	133.83	146.47	150.78
<i>Butter, Danish, London . .</i>						
	179.59	173.94	183.25	172.24	206.46	189.74
<i>Sugar:</i>						
96°, London	6.96	7.28	6.90	9.43	9.57	7.91
Raw 88°, Prague	6.80	7.13	5.73	7.73	8.21	7.04
<i>Cotton:</i>						
Middling, Liverpool	91.10	90.40	97.01	102.14	74.84	68.22
Broach, Liverpool	78.37	73.81	77.40	81.64	61.91	55.02
Sakellaridis, Liverpool . . .	122.24	128.56	149.91	151.69	122.04	112.62
<i>Rubber, plant, sheet, New York</i>						
	84.27	105.51	117.42	147.84	115.43	89.19
<i>Wool, fine crossbred, London .</i>						
	317.49	366.52	380.20	446.88	395.92	303.45

In the principal importing countries the measures of control were not generally abandoned during the revival, so that the recession did not involve, as a rule, any drastic revision of policy. The behaviour of wheat prices in Germany and, to a lesser extent, in France and in Italy deserves, however, special attention. Germany stands out as the country in which the economic system is most thoroughly controlled. The German market for agricultural products is virtually isolated, and the price system is as nearly autonomous as possible. The prices of certain basic farm products, including wheat, are fixed according to regions. The outstanding characteristic of the evolution of wheat prices in Germany—and wheat may be taken as typical in this respect—is their extraordinary stability throughout a period of wide variations on the world market. The changes that took place were slight, and often in a sense contrary to the changes in world prices.

In France wheat prices in 1935 were still much above the world level, though the margin had narrowed down. They rose at the end of 1935, and in 1936; but after the devaluation in September 1936, the trend of gold prices diverged sharply from that of nominal prices, and while the latter increased rapidly, the former declined, because the rise in internal prices failed to keep pace with the specific depreciation of the currency.

The movement of wheat prices in Italy was also influenced by the re-organisation of marketing through the *ammassi* which took place in the summer of 1936, and by the alignment of the lira in October of that year. While nominal prices have been rising slowly, but continually, since the autumn of 1935, gold prices dropped sharply at the end of 1936. Since then, owing to the strict control of the rate of exchange of the currency, they have varied within relatively narrow limits.

The examination of the movement of gold prices of the principal agricultural products also reveals the extent to which certain countries, by means of an active market and prices policy, have succeeded in making their price systems independent of outside influences.

The few deviations from the general trend in the exporting countries, of which the rise in the prices of oats in Argentina in 1938 is an example, are generally due to short crops or other local causes. In the case of some particular commodities, the market in which is subject to effective control, prices may also have deviated from the general trend; but these cases are exceptions which confirm the rule. The trend of agricultural prices on the world market was unmistakable.

The cases in which the course of gold prices diverged from that in national paper money were practically confined to the countries in which there has been a devaluation in 1936; and even in these—with the exception of France, where the franc continued to depreciate, after a sharp fall following the devaluation—gold and nominal prices generally moved on parallel lines. In some South-American countries there have been momentary deviations due to variations in the trade balance, but, as a rule, they have been more or less promptly corrected by tightening up the control over trade and exchanges. With the rates of exchange relatively stable since the sudden dislocations produced in

the autumn of 1936 by the sequence of devaluations, gold prices during the years 1936-37 and 1937-38 could be considered sufficiently representative of the general price trend of the world market to dispense us from the necessity of making a detailed examination of the movements of prices in national currencies, which would be bound to reproduce very much the same picture. Accordingly, we shall merely give a table of quarterly index numbers of wholesale prices of agricultural products in those countries for which such indices are available.

Quarterly General Index-numbers of Prices of Agricultural Products.

(First quarter of 1929 = 100.)

Countries	1936		1937				1938	
	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
Germany (wholesale prices)	79.5	77.8	77.8	78.3	79.5	78.7	79.1	79.5
England and Wales	87.5	89.6	92.4	95.8	95.1	94.4	93.5	91.7
Argentina	86.8	87.5	95.0	100.5	102.7	101.8	100.8	90.0
Belgium ⁽¹⁾	104.2	113.2	111.6	109.9	119.6	124.0	123.2	123.6
Canada	73.5	80.8	90.2	90.1	86.4	86.4	87.2	81.1
United States: Bureau of Agricultural Economics	82.9	83.6	88.4	87.0	83.6	74.0	67.3	63.5
United States: Bureau of Labor	78.2	80.9	87.0	85.0	82.2	71.9	66.5	64.3
Finland	73.5	75.7	82.2	81.3	82.2	84.7	86.6	84.1
Hungary	52.9	56.6	59.6	58.8	60.3	61.0	61.0	67.0
Ireland	65.0	69.3	67.4	75.3	75.9	77.1	75.7	79.1
Lithuania	38.9	43.0	46.6	47.3	47.3	46.3	40.6	46.0
New Zealand ⁽²⁾	129.4	131.9	137.2	143.9	145.1	150.9	136.5	136.9
Netherlands	57.9	57.9	62.1	66.4	70.7	68.6	68.6	71.8
Poland ⁽³⁾	47.7	51.5	54.1	57.8	58.9	56.7	55.8	55.3
Sweden ⁽³⁾	117.7	118.3	121.4	120.2	122.1	125.8	127.8	124.3
Yugoslavia:								
" vegetable production	44.6	48.5	49.6	50.2	55.3	62.8	63.4	65.3
" animal production	58.9	60.9	59.4	59.4	62.1	62.9	62.2	61.0

(¹) Base: 1st quarter of 1932 = 100. (²) Base: 1st quarter of 1931 = 100. (³) First month of each quarter compared with January 1929.

The decline, according to these indices, is most pronounced in the United States, Argentina and Canada.

In Europe, price trends were less uniform. In Germany there was stability. In England, the maximum was reached during the second quarter of 1937, since when there has been a steady decline.

In the Netherlands, where a far-reaching system of regulation and control of agricultural markets, put in operation during the depression, has not been abandoned, the index numbers rose continually till the third quarter of

1937. There was then a reaction in the next six months, but in the second quarter of 1938 a recovery took place. In Sweden, prices improved almost continuously till the second quarter of 1938, when there was a slight setback, probably due to the recession, which had been late in making itself felt in the Scandinavian countries, but which, in 1938, reached them also. In the agricultural countries of Eastern and South-Eastern Europe, where economic conditions during the period under review were determined more by regional factors than by developments on the world market, the price trends were somewhat peculiar. In Hungary, there was a slight reaction in the second quarter of 1937, but there has since been a continuous recovery. In Poland the reaction which began at the end of 1937, has been relatively slight. In Yugoslavia recovery has been practically continuous, and was particularly marked in vegetable products. In all these countries prices had fallen to exceedingly low levels during the depression, and the development, in the course of the last few years, of their exchanges on the basis of bilateral trade and clearing agreements with their industrial neighbours more than compensated them for the effects of the general recession.

Two countries do not appear in our table, though the movements of agricultural prices in both present considerable interest. In France, agricultural prices advanced rapidly until September 1937. Between September 1937 and March 1938 the movement came practically to a standstill. During the second quarter of 1938, there was a decline in animal products, coupled with a considerable rise in vegetable products. In Italy the steady rise in agricultural prices, largely owing to active Government support, has been practically continuous since 1934.

Agricultural prices and costs.

During a period of rapid changes in prices, considerable ruptures in the balance of prices of different commodities are unavoidable. Agriculture is more liable than most other branches of production to suffer from such upheavals, being more difficult to organize. Hence, during the great depression of 1929-1932, governments had to intervene in favour of the farmers, either doing for them, or making them do, under some compulsory scheme of control, what most industries did through voluntary combination for the regulation of production and prices. This intervention, to which agriculture was largely indebted for its recovery, has not generally been abandoned during the period of rising prices, and since the recession the measures of regulation and control have often been intensified. Accordingly, when the fresh reaction in prices began, the farmers in most countries were better able to cope with the situation than in 1929, when the depression took them utterly unprepared and played havoc with their markets and their incomes. This difference in the farmer's position, which involves to a certain extent the recognition of the special position of agriculture as a public service, is exceedingly important, and has always to be borne in mind in considering present-day agricultural problems. In most countries, agricultural prices are not what they were in 1929. Then they were merely what the farmer could obtain in competition on the open market, now they are often conceived of as his just remuneration for performing a function of special social utility, the

continued performance of which must be assured, if necessary at a certain expense to the community as a whole. Whatever the differences in form, such is the substance of the agricultural price policies of the New Deal in the United States, with its "parity prices" and its "farmer's dollar"; of National-Socialist Germany with her fixed "fair" prices of agricultural products; of the Wheat Act

FIG. 1. — Movement of prices of agricultural products and of articles bought by the farmers and of agricultural wages in the United States (1909-10 to 1913-14 = 100).

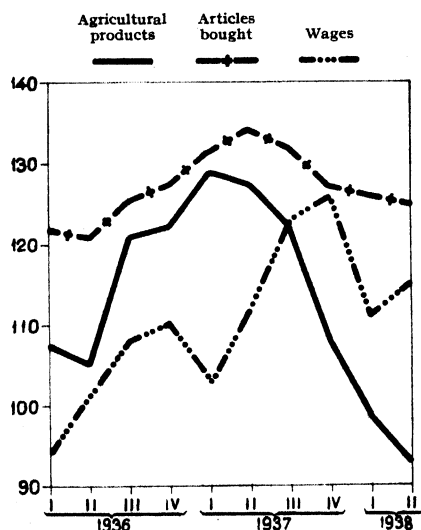
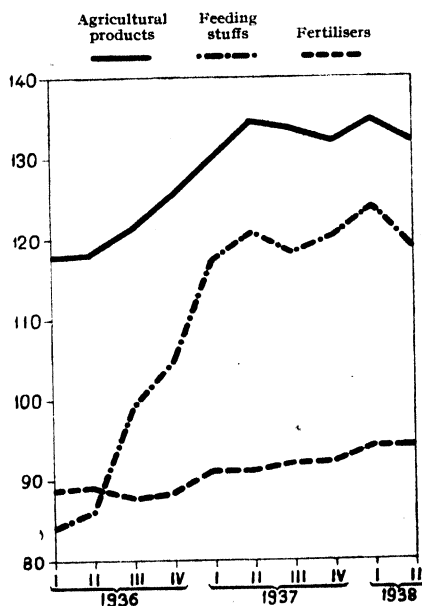


FIG. 2. — Movement of prices of agricultural products, of feeding stuffs and of chemical fertilisers in England and Wales (1911-1913 = 100).



and the marketing schemes in Great Britain; of the *Office National du Blé* in France, etc. Under all these different schemes, agriculture is to a larger or smaller extent withdrawn from the competitive struggle of the market and placed in a sheltered position, under the care and tutelage of the State.

Under such conditions the prices of agricultural products, except in countries depending entirely on exports and therefore unable to support them by national measures for any considerable time without incurring enormous losses, are bound to display far greater stability than they did under competitive conditions, such as existed in 1929.

Government intervention was not limited to control of the prices of agricultural products, but often involved measures aimed at the reduction of costs of

production as well. This was specially important in countries which, being dependent on the world market for the disposal of their products, could exercise no effective control over prices, and thus had to intervene at the other end. In some so-called importing countries this was a necessary adjunct to the price policy, in so far as, in the interest of the economic system as a whole, agricultural prices could not be raised.

Moreover, since our last survey was written, important changes have taken place in the general economic situation.

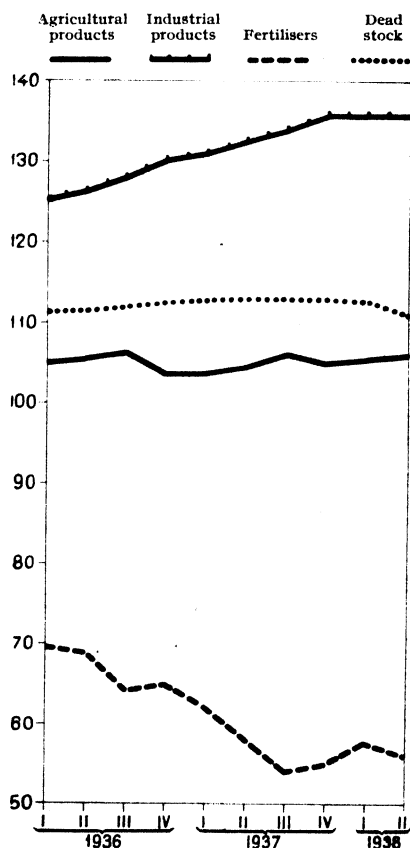
The recession, though it involved a decline in agricultural prices, greatly eased the situation with regard to costs of production. With the falling-off of United States demand for primary products, the strain to which rearmament subjected the raw material markets was considerably relieved, and the threatened dearth of the means of production necessary to the farmer had on the whole not materialised. The pitch to which the tension in the economic system rose in the spring of 1937 has not been maintained, and in spite of the depression of prices the agricultural situation became far less dangerous, than it then appeared.

Passing now to the examination of changes in the relation of agricultural and industrial prices it is necessary to point to the unavoidably crude approximation with which our data reproduce the actual situation. Failing anything better, they do however give an idea of the direction of changes in some at least of the principal items of the farmer's costs, compared with his returns.

In the table on the next page we show the movement of index-numbers from the beginning of the recovery to 1937. From these annual figures we shall pass to a brief survey of quarterly indices.

With the single exception of Germany in which both the prices of agricultural products and those of the principal commodities bought by the farmer displayed great stability throughout the later stages of the revival and the reces-

FIG. 3. — *Movement of prices of agricultural products, of industrial products, of chemical fertilisers and of agricultural dead stock in Germany (1913 = 100).*



*Index-numbers of Prices of Agricultural Products and of Commodities
and Services Bought by the Farmers.*

	1932	1933	1934	1935	1936	1937
Canada (Dominion Bureau of Statistics, 1926 = 100):						
Total, Canadian farm products . . .	48.4	51.0	59.0	63.5	69.4	87.0
Fertilisers	72.3	73.8	75.9	75.8	74.5	74.5
Consumers goods	77.8	76.0	77.0	75.7	75.5	78.3
Wholesale products, general	66.7	67.2	71.6	72.1	74.6	84.5
England and Wales (Ministry of Agriculture, 1911-13 = 100):						
Agricultural products	112.0	107.0	114.0	117.0	122.0	133.0
Feeding stuffs	95.0	85.0	91.0	87.0	93.0	120.0
Fertilisers	90.0	90.0	90.0	88.0	89.0	92.0
General wholesale prices	94.0	93.7	96.4	99.5	104.4	120.6
Germany (Statistisches Reichsamt, 1913 = 100):						
Total, agricultural products	91.3	86.8	95.9	102.2	104.9	104.6
Chemical fertilisers	70.4	70.2	68.7	66.8	66.8	57.0
Machinery and implements	116.1	111.6	111.1	111.1	111.6	112.7
Manufactured goods	117.5	117.7	117.3	124.0	127.3	133.2
Poland (Central Statistics Bureau 1928 = 100):						
Agricultural products	58.9	52.4	46.8	43.8	45.4	53.6
Commodities bought	81.4	72.9	70.6	66.3	64.6	66.2
General wholesale prices	65.5	59.1	55.8	53.0	54.0	59.4
United States Bureau of Agricultural Economics, (1909-10 to 1913-14 = 100):						
Total, agricultural products	65.0	70.0	90.0	108.0	114.0	121.0
Commodities bought	107.0	109.0	123.0	125.0	124.0	130.0
Agricultural wages	86.0	80.0	90.0	98.0	107.0	120.0
Yugoslavia (State Bank, 1926 = 100):						
Vegetable products	67.5	57.2	57.4	68.2	69.7	74.1
Animal products	56.6	57.1	55.4	56.6	60.0	65.1
Industrial products	66.2	70.8	67.4	66.7	69.7	77.6
General wholesale prices	65.2	64.4	63.2	65.9	68.4	74.7
Belgium (Boerenbond Belge, 1909-1914 = 100):						
Total, agricultural products	524	487	467	502	555	604
Total, production expenses	776	679	649	630	689	736
Chile (Bureau of Statistics):						
Total, agricultural products	197.8	259.8	249.4	284.3	336.3	430.0
National industrial products	245.6	328.8	330.4	349.5	401.8	489.4
Sweden (Kungl. Lantbruksstyrelse, 1909-1913 = 100):						
Total, agricultural products	91	92	107	117	123	129
Total, commodities purchased	119	115	121	129	133	145
Agricultural wages	176	170	168	170	174	193
Norway (Landbrukshoiskole, 1909-1914 = 100) (1):						
Total, agricultural products	123	114	112	119	134	140
Total, commodities purchased	134	138	133	136	143	151
Agricultural wages	161	152	146	146	152	162
Finland (Bureau of Statistics, 1928-29 = 100) (1):						
Total, agricultural products	82.6	81.2	80.7	84.0	89.4	93.1
Total, commodities purchased	79.2	84.7	81.4	87.4	89.2	99.2

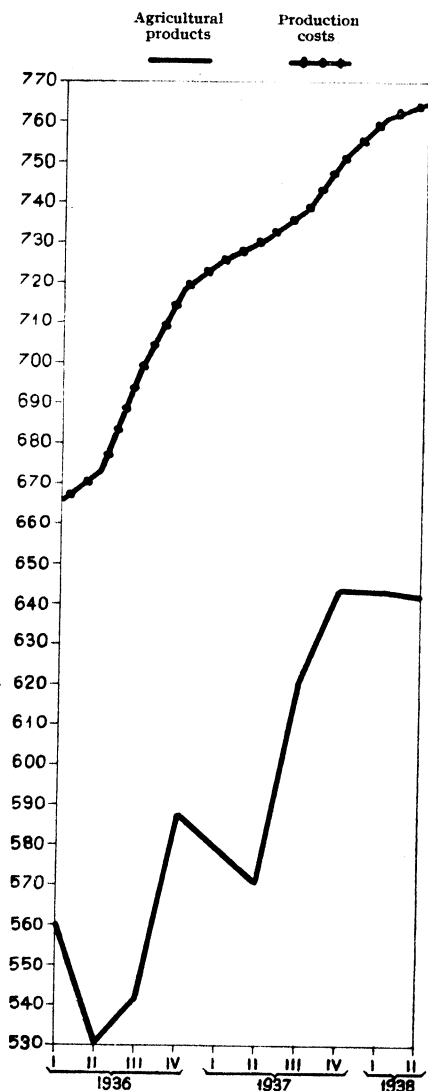
(1) In Norway and Finland for the agricultural year beginning on April 1st.

sion, in 1936 and, still more, in 1937 the prices of agricultural products registered a marked rise. Dealing here with general index numbers, in which the individual variations are hidden, one is liable to underestimate the extent of the disequilibria which, particularly during the later stages of the revival, began to develop within the price system. These ruptures of balance between the prices of individual commodities are only occasionally reflected in our table.

It is only in 1937, a year which saw the boom reach its climax and the recession begin, followed by the large increase in the supply of agricultural products owing to plentiful crops, that—in spite of the rise in the index-numbers of agricultural prices—signs of the balance becoming upset began to appear. This reflects the fact that the advance in the annual index of agricultural prices is often entirely accounted for by the months preceding the boom, after which there has been a more or less pronounced reaction; a reaction more marked in farm products than in any of the commodities or the services farmers buy.

We see that, in the *United States*, the rise in the agricultural price index in 1937, though marked, is almost overtaken by that in commodities bought, which used to lag considerably behind it since 1934, and that agricultural wages have advanced by nearly twice as much as farm products. Indeed, if we consider the trend of the three series, as plotted in the diagram No. 1, we see how, since the recession, price relations turned against the farmer.

FIG. 4. — Movement of prices of agricultural products and of costs of production in Belgium (1909-1914 = 100).



In *England*, where animal husbandry is the most important branch of farming, and where fodder costs therefore play a decisive part in the farmer's balance of profit and loss, the characteristic development of the period under review

was the rise in the prices of feeding stuffs, which is shown in diagram No. 2 in relation to the movement of prices of agricultural products.

FIG. 5. — Movement of prices of agricultural products and of articles bought by the farmers in Sweden (1909-1913 = 100).

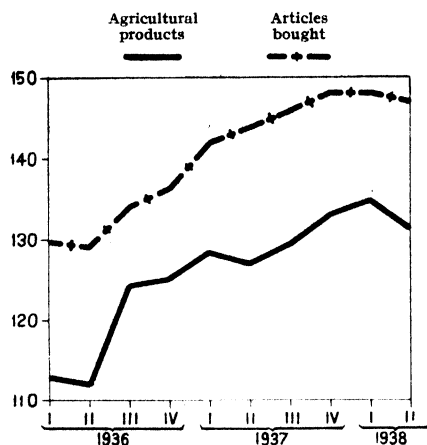


diagram No. 4, and at a greater pace than did prices, so that the farmer's position would appear to have somewhat deteriorated.

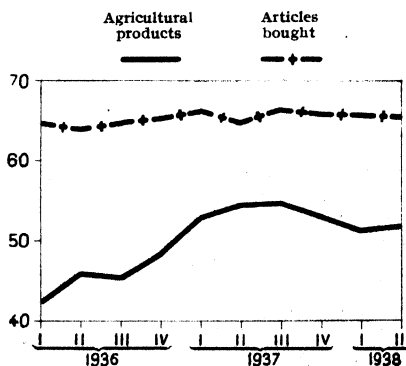
In *Sweden* the price situation has on the whole been distinctly favourable to the farmer. Indeed, even during the depression, Sweden was never affected as much as most other countries. During the period under review agricultural prices rose almost uninterruptedly until the first quarter of 1938, and only in the second quarter of that year was there a reaction. The prices of commodities bought by farmers also rose, but to a somewhat lesser extent, and they also reacted in the second quarter of 1938, but less than did agricultural prices.

In *Poland* the trend of agricultural prices was upwards till the third quarter of 1937. Since then there has been a slight decline. The index of prices

The position in *Germany* during the period under review shows a combination of great stability in the prices of agricultural products with a progressive rise in the general index of prices of finished industrial products. The position of the farmers, in face of this depreciation of their products relatively to manufactured goods, was however considerably mitigated by the effective control of the prices of the principal means of agricultural production—fertilisers and implements—the cost of which actually fell.

In *Belgium* the general trend of agricultural prices has been upwards, though seasonal and other fluctuations were sometimes rather pronounced. In the first half of 1938 there was a slight reaction. The index of costs of production rose continually throughout the 30 months covered by

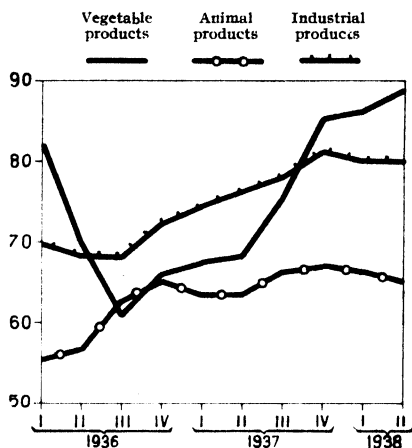
FIG. 6. — Movement of prices of agricultural products and of articles bought by the farmers in Poland (1928 = 100).



of commodities bought by the farmers displayed remarkable stability, so that, on the whole, the farmers' purchasing capacity ought to have increased. Indeed, in Poland the Government was not called upon during the period under review to take any special measures for the control of agricultural markets and prices, and its activity was focussed upon schemes of permanent improvement in agriculture. It should also be noted that Poland is among the few countries which have stuck to gold parity, and that the working of this deflationary factor upon its price system has been to smooth down any tendency towards a rise in commodity prices.

In Yugoslavia there has been a rising price trend since the second half of 1936. This rise is very pronounced in vegetable products, but in animal products much less marked and rather unsteady. The prices of industrial products rose considerably, though much less than those of vegetable products, but in 1938 there has been a slight reaction. The situation during the period under review developed on the whole favourably for Yugoslav agriculture.

FIG. 7. — *Movement of prices of agricultural products and of industrial products in Yugoslavia (1925 = 100).*



Returns of agriculture.

As we have seen, during the two years covered by the present survey both the volume of agricultural production and the prices of agricultural products underwent drastic changes. In the present section we shall make an attempt, on the basis of the few and fragmentary data available, to estimate the effects of these changes upon the economic position of agriculture.

In the United States, the cash farm income of farmers has increased continually since 1933. Up to 1936, this increase was mostly due to a rise in prices due to the joint effects of the New Deal and of short crops. In 1937, in spite of the reaction in prices, the increase in the volume of sales due to abundant crops and a slight increase in Government payments under the Soil Conservation Act brought about a considerable rise in farm income. According to the preliminary estimate for 1938, it would appear that the continued reaction in prices, aggravated by the repetition of bountiful crops, reduced the farmers' income considerably, despite a fresh increase in the volume of sales. The total cash income of farmers in the United States, including Government payments, in millions of dollars, was: 5,117 in 1933; 6,378 in 1934; 7,090 in 1935; 7,944 in 1936 and 8,600 in 1937. In 1938 it is provisionally estimated at 7,500 million dollars.

In *Germany*, the income of agriculture has increased continually since 1932-1933, when it was at its lowest with 6.4 milliards RM. In 1936-37 it was 8.9 milliards, and in 1937-38 reached 9.5 milliards, the increase being due almost entirely to an expansion of production and sales.

For some countries we possess estimates of the net value of total agricultural production. In *Canada*, the net value of agricultural production, which reached 1,020 million Canadian dollars in 1920, and fell to a minimum of 493 million dollars in 1932, had since been rising continually, until in 1936 it reached 690 million dollars. In 1937 however it dropped to 682 million dollars, as a result of the great drought of that year. In *Switzerland*, the net value of agricultural production which, in 1936, had fallen to 1,146 million Swiss francs, increased to 1,247 million francs in 1937.

For *Sweden* we possess figures for the gross value of agricultural production. After a period of depression from 1930 to 1933, the gross value of agricultural production has very nearly returned to the figure of 1929, the variations from year to year in 1934, 1935 and 1936 being slight. In 1936, the figure was 1,029 million Swedish crowns and in 1937 it rose to 1,183 millions: a figure considerably in excess of 1929 (1,059 millions).

The above rather scanty data have the great drawback of telling us nothing about the actual economic position of the farmer, since, while they show how much he obtains for his products, they are completely silent about his costs. From that point of view, the most interesting source of information consists in the *results of farm accountancy*, provided they are statistically representative and sufficiently recent. For the purpose of our present study, however, which is to show the changes in the economic position of agriculture in various countries owing to the recession, practically nothing has been published as yet. Indeed, for the crucial year 1937-38, the results of farm accountancy are available at the moment of writing for *Denmark* only. The data published by the Danish Bureau of Farm Management show that the net returns of controlled farms, which were 78 crowns per hectare in 1934-35 and 93 crowns in 1935-36, fell to 52 crowns in 1936-37 and rose again to 91 crowns in 1937-38. Farm expenses increased from 564 crowns per hectare in 1936-37 to 594 crowns per hectare in 1937-38, the rise being chiefly due to higher cost of labour and of feeding stuffs. The gross returns increased from 616 crowns in 1936-37 to 685 crowns per hectare in 1937-38. The only other data available for 1937-38 are for the Overijssel district in the *Netherlands*, also rather a peculiar case. There, the net returns of controlled farms increased from 27.98 florins per hectare in 1936-37 to 42.78 florins in 1937-38.

For other countries our information reaches only to 1936-37, covering only the recovery phase. It generally reflects the improvement which had been taking place practically everywhere before the sudden reaction in 1937. Thus, we see that, in *Switzerland*, the net returns of all farms, as estimated by the Secretariat of the Swiss Peasants' Union at Brugg on the basis of farm accountancy data, has increased continually since 1933-34, passing from 214 to 256 Swiss francs per hectare between 1935-36 and 1936-37. In this case, unlike most other cases the increase in net returns, was entirely accounted for by a diminution

of farm expenses. In *France*, the increase in the net return of controlled farms in the Soisson district was from 284.67 francs in 1935-36 to 565.47 francs in 1936-1937, and in Etrepagny from 242.69 to 429.23 francs per hectare; but here the depreciation of the franc should be taken into account. In *Estonia* we have an increase in net returns from 11.03 Estonian crowns per hectare in 1936-37 to 15.80 crowns in 1936-37; in *Poland* from 52.82 to 63.14 zloty per hectare. In *Sweden*, the net returns of controlled farms of the Central region increased from 51 Swedish crowns in 1935-36 to 52 crowns per hectare in 1936-37. In Southern Sweden the increase in net returns was from 124 to 131 crowns per hectare. In both regions farm expenses increased. In *Norway*, the increase in net returns of peasant farms was from 101.9 Norwegian crowns in 1935-36 to 115.2 crowns per hectare in 1936-37.

V. — Agricultural policies in the different countries.

The last chapter of our volume deals with the agricultural policies followed in the different countries during the period under review. It would obviously be impossible to give here even a brief outline of the main trends of the evolution of the national policies, which are peculiar to each country, but some of the outstanding characteristics of the policies followed may be mentioned here.

One feature of the trend of agricultural policy during the two years dealt with in our survey, to which we have already had occasion to point, and which played a very important part in the situation, was that the far-reaching measures of government intervention, to which agriculture has been subject practically everywhere since the depression of 1929-32, have generally survived during the recovery, with but very few relaxations. It could hardly have been otherwise, seeing that the revival in agriculture has been due to a very large extent to these measures of government intervention, and that, once put into operation, they penetrated so deep into the whole structure of agricultural production and trade that they could not easily be withdrawn without throwing the whole agricultural sector of the economic system into utter confusion. Accordingly, when the recession came, it did not generally necessitate the adoption of new measures of intervention or the creation of new machinery of control; and though national policies naturally differ according to the special conditions of the countries concerned, as well as to the leading principles of the general economic policy followed by their respective governments, this applies indifferently to them all.

The recession, indeed, during the period under review, has not produced anything essentially new in agricultural policy.

The only exception to this is provided by the United States in the *Agricultural Adjustment Act of 1938*, but even here it is more apparent than real. Indeed, the new Act put into effect an agricultural policy of a more permanent nature than that inaugurated in 1933; a policy which has been envisaged ever since the beginning of the New Deal. The recession may have accelerated the passage of this enactment by once again forcibly focusing attention upon the

precariousness of the position of the farmers, but all the main points of the scheme embodied in the Act have been under consideration for a considerable time past.

Another feature of the reaction of national agricultural policies to the recession was that such reaction, hardly noticeable anywhere, was least of all marked in those countries which have deliberately adopted the system of comprehensive economic planning and control. In these countries, of which Germany and Italy are the two outstanding examples, the control of production and trade makes the home market to a large extent independent of the changes which take place in the rest of the world. As we had occasion to see, this independence was clearly evident in the evolution of prices of agricultural products in these countries throughout the recovery and the subsequent recession. Isolated, as far as possible, from outside, these countries did not feel the impact of the recession to anything like the extent to which it was felt in other countries, more open to the influences from the world market, and their policy, accordingly, remained unchanged and followed its appointed course.

The countries in which the recession was most painfully felt were the overseas agricultural exporting countries. Their exports depreciated heavily, and there was very little they could do by their own national efforts to meet the situation. Practically the only way open to them was the tightening-up of restrictions upon imports and of exchange control, by which they could at least try to prevent an unfavourable turn in their balance of trade and of payments. This, indeed, was the means widely applied by the countries of Latin America—Argentina, Brazil and some other of the South-American Republics.

In some cases, the agricultural exporting countries sought to remedy the situation by having recourse to international action. Thus, in 1938, there began a movement in favour of the revival of the International Wheat Agreement, which had been in abeyance since the beginning of the recovery, and in January 1939 a conference met in London with this object in view. The export quotas fixed by the existing international bodies for sugar and rubber, which have been raised during the boom, were again heavily reduced in 1938. But these international actions covered a very limited field, and as autonomous national action was also seldom effective, the situation of these countries was difficult.

The agricultural exporting countries of Europe, during the period under review have not, on the whole, suffered from the recession to any considerable extent. As a result, whatever changes there may have been in their agricultural policies were mostly accounted for by considerations of permanent improvement in the organisation of agriculture, as distinguished from emergency measures. The fact that they were so little affected by the recession, while the depression of 1929-32 had all but ruined them completely, was mostly due to the enormous development, in the course of the last few years, of bilateral trade agreements which ensured to the agricultural countries of Eastern and South-Eastern Europe profitable markets for their exportable surpluses. In some cases, these agreements actually involved a more or less far-reaching re-orientation of agricultural

production in the countries concerned. During the period under review the development of bilateral agreements in Eastern and South-Eastern Europe played an exceedingly important part and was, probably, the outstanding feature of the whole evolution of agricultural policy in this vast region.

Of the other countries there is little to say, since, as we have pointed out, on the whole they continued to follow their different policies, generally marked by far-reaching government intervention, along the lines described in considerable detail in the preceding volumes of our survey. France, however, should be mentioned here, as her agricultural position and policy has been profoundly affected by the continuous depreciation of the franc. The movement of prices due to monetary conditions could not fail to exercise an influence upon the activity of the *Office National du Blé* which had to adopt its policy to changing conditions. But, on the whole, the depreciation of the franc, and the consequent rise in commodity prices, benefited the farmer, and consequently facilitated the task of the Government in assisting agriculture.

G. P.

TRADE RELATIONS OF THE U. S. S. R. WITH WORLD AGRICULTURAL MARKETS

SUMMARY :— General features of the foreign trade of the U. S. S. R. — Trade treaties between the U. S. S. R. and other countries. — Volume and character of the foreign trade of the U. S. S. R. — Alteration in the composition of Russian foreign trade.

I. — General features of foreign trade of the U. S. S. R.

The State Monopoly of Foreign Trade.

The lines along which the Russian planned economy was to develop its economic relations with the outside world found expression as early as April 22, 1918 in the formation of the State Monopoly of Foreign Trade. In 1922 this organization was given its legal place as an integral part of the economic system, through the Civil Code. Clause Seventeen stated that "no person or juridical person in the territories of the R. S. F. S. R. (1) shall take part in foreign trade except through the agency of the State as represented by the People's Commissariat for Foreign Trade. Independent dealings on the foreign market are permissible only in circumstances expressly defined by the law, and then only under the supervision of the People's Commissariat for Foreign Trade".

(1) Russian Socialist Federation of Soviet Republics. It may be mentioned here that the Union of Socialist Soviet Republics (U. S. S. R.) was organized on July 6, 1923 as a free union of Soviet Republics, of which there were originally four, the largest being the R. S. F. S. R.

In the years immediately after the war Russia's output fell off considerably, and industry could only be supplied with raw materials by requiring for raw material exports special permits, issued by a particular Government organization in each separate case. In addition, an adequate market for home products had to be guaranteed, and this consideration, in view of the great fall in purchasing power on the home market, made it necessary to restrict imports more or less completely. Thus both exports and imports required regulating. This was done through a plan drawn up by the State Planning Organization and rigorously applied by the State Trade Monopoly.

The rapid depreciation of the rouble had also to be checked. One of the essential requirements in solving this problem was the prevention of exports of specie, which meant that the balance of trade would have to be made favourable. This supplied a further reason for introducing and maintaining a monopoly of foreign trade.

This monopoly of foreign trade aims at checking unregulated trade with foreign countries and preventing the developing socialist economy from being submerged by goods from other countries. In the opinion of the Russian planners, tariffs alone were scarcely adequate to achieve this object, as even the very highest tariffs could be compensated by high bounties on goods exported to the U. S. S. R.

The guiding principle of the U. S. S. R.'s tariff policy is the protection of industry, and particularly heavy industry. Nevertheless, as a result of the monopoly system tariffs play a less decisive role in the U. S. S. R. than in other countries. The principal means of protecting industry internally are the prohibition of the purchase of certain articles and the refusal to grant licences. The same policy is adopted in regard to foreign trade: the import of goods produced in sufficient quantities within the country is not permitted. On the other hand, if the output of certain goods within the country is inadequate they may be imported despite the home output.

Under the Russian planning system, at the beginning of each year a detailed plan of the balance of payments is drawn up which provides for the imports required to supply the population and the sums needed to cover financial obligations. On the basis of this estimate the total quantity of exports is calculated. The composition of these exports is decided on after a careful study of the position of the export markets.

The various import and export organizations of the People's Commissariat for Foreign Trade are financially self-supporting. They enjoy the rights of a juridical person. Among the export associations for agricultural products may be mentioned the *Exportchleb*, founded in 1923, a special organization which the State entrusted with the monopoly of exports of cereals, the *Exportljon*, an organization for the export of flax and hemp fibres; the *Exportles*, founded in 1926 for the export of wood; the *Puschosyndicat* for the export of furs etc. There are similar organizations for the various imports. They deal with the import (and sometimes also export) trade along the lines laid down by the plan after confirmation from the People's Commissariat for Foreign Trade.

The basic principle that foreign trade should be conducted by the State has not so far been modified. Article 14 of the New Constitution of the end of 1936

cites foreign trade based on a State Monopoly as coming within the competence of the supreme power of the U. S. S. R.

In so far as the new social order eliminated the free play of private enterprise it involved the planning of the whole economic activity of the country. And this required in particular a State monopoly of foreign trade. The regulation of economic relations with the outside world was a necessary complement to the regulation of the whole internal economic activity.

Trade treaties between the U. S. S. R. and other countries.

In the first few years after the raising of the economic blockade against the Soviet Republic foreign trade was to a large extent more or less fortuitous. The first trade treaties were only concluded after the introduction of the "new economic policy" (N. E. P.) in 1921.

The first treaties were extremely involved because the negotiators represented countries whose constitutions and economic systems differed fundamentally. A *modus vivendi* for economic cooperation was only found slowly.

The principles of the U. S. S. R. foreign trade monopoly were made the basis for her foreign trade agreements.

Trade treaties between the U. S. S. R. and other States are almost all, as has been the practice in other international trade treaties for over a century, based on the most favoured nation clause. Every preferential tariff granted by one country to another country is automatically applied to the U. S. S. R. as well.

Naturally we cannot enumerate here all the trade treaties concluded by the U. S. S. R. with other countries during the twenty years of her existence, much less undertake a detailed study. Here we shall confine ourselves to outlining the main characteristics of the Soviet Union's foreign trade policy as shown by her principal trade treaties.

On February 7, 1924 the U. S. S. R. concluded a trade treaty with Italy—the first Russian trade treaty, and the first expression of the Soviet's foreign trade policy. Trade agreements preceding this treaty, such as those with Austria, the United Kingdom, Norway, Denmark and Italy herself (in 1921) were no more than declarations describing the lines along which future trade relations would be developed.

The treaty with Italy is in the case of nearly every commodity based on the most favoured nation clause, though, as in most other Russian trade treaties, this clause does not extend to the privileges conceded by the U. S. S. R. to the Baltic countries (Estonia, Latvia and Lithuania) and the Eastern countries (Iran, Mongolia, etc.).

The principles formulated in this treaty influenced the later practice of the U. S. S. R. in foreign trade and appeared in some form in all subsequent trade treaties of the U. S. S. R.

A customs convention was signed at the same time as the trade treaty, and this conceded reciprocal tariff reductions on the most important Italian and

Russian export items. The tariff convention, however, did not lay down the general principle of the most favoured nation clause for trade relations between the U. S. S. R. and Italy, but confined its application to specific goods.

On May 6, 1933 the convention of February 7, 1924 was replaced by a new tariff agreement based on the principle of most favoured nation treatment for all goods.

To increase Russian imports from Italy the Italian Government granted guarantee credits amounting to 75 per cent. of the Russian orders to Italian business houses for their export business with the U. S. S. R. These credits amounted in all to nearly 1 milliard lire (950 millions) and were paid back shortly after the dates fixed. The Credit Agreement signed on June 15, 1935 established fixed quotas for imports of Soviet goods into Italy, which for the most part were to correspond with the level of actual exports from the U. S. S. R. to Italy in 1934. Russian exports to Italy are paid for in lire, the U. S. S. R. using the exchange to buy Italian goods. This is naturally an advantage considering the strict exchange control. The agreement remained in force until July 30, 1936.

The chief U. S. S. R. exports to Italy are wheat, petroleum products, wood, coal, furs, iron-ore etc. Italy's chief exports to Russia are industrial products such as electric motors, motor cars, chemicals, etc.

Trade relations, regulated by the trade treaty of 1924 and the subsequent supplementary agreements, have in general developed satisfactorily. In recent years there have been certain controversies but these were resolved by the economic agreement concluded on February 7, 1939. This agreement also greatly extended the basis of trade by means of clearing arrangements.

Before the War Russia's trade with Germany was greater than with any other State. Imports from Germany constituted 47.5 per cent. of total Russian imports, while exports to Germany amounted to 30 per cent. of all Russia's exports.

After the War, following the provisional agreement with Germany of May 6, 1921, a trade treaty was concluded on October 12, 1925 which regulated the whole complex of economic relations between the two countries. The general provisions of this treaty confirmed Article 4 of the Treaty of Rapallo of April 6, 1922 by which the most favoured nation clause was made applicable to the general relations between the two countries, with the exception, as before, of preferences granted by Russia to the Baltic states, Iran, Mongolia, etc.

On May 28, 1932 a customs agreement was signed which allowed reductions of duties, or even duty free entry of many Russian exports to Germany such as cotton, flax etc.

In 1926 a credit agreement which had been concluded between the U. S. S. R. and German firms for the delivery of goods to the U. S. S. R. amounting to 300 million marks, was guaranteed up to 60 per cent. by the German Government (the German Government accepting 35 per cent. of the guarantee and the Governments of the provinces (*Länder*) in which the firms were situated 25 per cent.). The loans were for from 3 to 4 years. This was the first case of a large credit being guaranteed by the Reich for exports to the U. S. S. R..

To facilitate the exchange of goods in so far as it was dependent on exchange control, a protocol was ratified on December 22, 1931 by which commercial operations should take place in reichsmarks. By renouncing her claim to be paid in foreign currency for goods exported to Germany the U. S. S. R. obtained the right to pay in reichsmarks for orders placed in Germany. This made the German balance of payments more favourable. In 1933 a second credit agreement for a sum of 300 million marks was concluded.

On April 9, 1935 the Soviet-German annual Economic Agreement was signed. It provided for the U. S. S. R. placing new orders in Germany worth 200 million marks in addition to the existing quantities purchased. For these orders a bankers' syndicate, under the direction of the *Deutsche Bank- und Discontogesellschaft* and the *Dresdner Bank*, granted the U. S. S. R. a credit of 200 million reichsmarks for an average term of 5 years. The German Government guaranteed this credit up to 70 per cent. Payments for Russian exports could as a rule only be used to pay for orders placed in Germany *i. e.* for the payment of German exports to the U. S. S. R.

The effect of the 1935 credit agreement was to make Germany the largest exporter to the U. S. S. R. in 1937. By 1938, however, Germany had fallen back to sixth place. Germany has also lost some of her importance as an importer of Russian goods, despite a rise from fifth place in 1937 to fourth place in 1938.

On December 19, 1938 the existing economic agreement on trade and payments was extended to cover 1939 without alteration. By this agreement the U. S. S. R. may export in 1939 an amount equal to the value of imports from Germany in 1934 and 1935, *viz.* 200 million reichsmarks. As before, payments are to be made in reichsmarks through special accounts with the leading German banks and also with the *Garantie- und Kreditbank für den Osten* in Berlin, a daughter company of the State Bank of the U. S. S. R.

Before the War the *United Kingdom* held second place in Russian foreign trade, coming second to Germany, although at a considerable distance. Since the War trade relations between the U.S.S.R. and the United Kingdom have undergone many vicissitudes, which may, however, be neglected here. On February 16, 1934 a provisional trade treaty was concluded to put trade between the two countries on a normal basis. This agreement also applies to India, Newfoundland, Southern Rhodesia, all the British colonies and to the British Protectorates in South Africa.

This provisional treaty is based on the most-favoured-nation clause, although with certain modifications introduced because of the trade policy of the U. S. S. R. (special treatment for Baltic and Far-East States) and of the British system of imperial preference. The treaty aims at a gradual readjustment of the Anglo-Soviet trade balance. U. S. S. R. payments for imports from the United Kingdom 1 to 1.7 in 1934, 1 to and receipts for exports to the United Kingdom had to be in the proportion of 1.6 in 1935, 1 to 1.4 in 1936, 1 to 1.2 in 1937 and 1 to 1.1 subsequently. These proportions were strictly observed by the U. S. S. R., and even exceeded, for at the end of 1937 £16.113,000 were paid in excess of the given proportion.

On July 28, 1936 an agreement was concluded which granted a credit of 10 million pounds sterling to the U. S. S. R. The credit was to be applied to

the payment in specie of Soviet orders for goods of British origin placed between August 1, 1936 and September 30, 1937.

The chief U. S. S. R. exports to the United Kingdom are wood, flax, cereals, furs, bristles etc. In 1937 U. S. S. R. exports to the United Kingdom amounted to 32.7 per cent. of her total exports, while Russian imports from the United Kingdom amounted in the same year to 14.3 per cent. of all imports, compared with 6.2 per cent. in 1929.

The present composition of Russian exports to *France* has changed considerably compared with the pre-war position. In 1913 cereals amounted to almost half (48 per cent.) of total Russian exports to France, flax and hemp coming second, and then wood and naphtha products. In 1933 exports of cereals to France barely amounted to 1 per cent. of the 1913 quantity. At the same time exports of the other products mentioned were higher.

These changes resulted in part from alterations in the economic structure of the U. S. S. R. and in part from a heavy decrease in wheat imports into France from all countries.

On January 11, 1934 a trade treaty between the U. S. S. R. and France was signed which secured the application of minimum tariffs to a number of Soviet products, such as cereals, butter and eggs. The advantageous treatment secured to cereals from the U. S. S. R. is largely formal, for, as has just been said, exports of these have greatly decreased. On the other hand sawn wood, which had been kept out by prohibitive tariffs, is now being increasingly imported, despite quota restrictions.

By the same treaty the U. S. S. R. agrees to place orders in France equal in value to the value of Soviet goods which are exported into France through special import quotas.

U. S. S. R. exports to France amount to an average of 5 per cent. of total Soviet exports. Imports from France in 1935 were 7.3 per cent. of total imports, but in 1937 they fell to 2.1 per cent.

Trade treaties with the *Baltic States* (Estonia, Latvia and Lithuania) are based not only on the most favoured nation clause but also on special treatment (*clause balte*). By this clause the contracting parties agree not to extend these special privileges to other States. This applies especially to the reductions on Baltic and Soviet tariffs laid down by the tariff convention.

In each of these States, the volume and terms of trade are based on a balance of trade, the value of exports from the U. S. S. R. to any one of these States having to equal the value of imports from that State to the U. S. S. R.

All the *Scandinavian Countries* and also *Belgium* have concluded trade treaties with the U. S. S. R. The first was *Sweden*, who on March 15, 1924 signed an agreement with the U. S. S. R. based on the reciprocal most favoured nation clause. On June 30, 1933 the total Swedish guarantee of credit for Soviet imports was fixed at Kr. 75 million.

Trade agreement based on the most-favoured-nation clause were also concluded with the *Central and South European States* (Poland, Czechoslovakia, Romania and Greece). The annual trade agreement with *Poland*, renewed each year since 1934, grants the U. S. S. R. tariff reductions on certain goods while

quotas have been fixed corresponding to the sums paid by the U. S. S. R. for imports from Poland. On February 19, 1939 a commercial agreement relating to reciprocal trade and clearing was concluded. This was the first occasion on which these two countries had signed a treaty based on the most favoured nation clause. By this agreement the U. S. S. R. will export tobacco, wool, cotton, fertilizers, furs etc. while Poland will supply the U. S. S. R. with coal, textiles, artificial silk etc. All operations will be conducted through the Polish Institute for the Adjustment of Payments.

Apart from the peace treaty of 1921, which, like that with Iran of the same year, deals with many economic questions, a trade agreement was signed with *Turkey* on March 11, 1927. It gives a precise definition to the trade relations between the two countries, which had hitherto been regulated by provisional arrangements. The treaty is based on the most favoured nation clause and aims at balancing Soviet exports to Turkey with Turkey's exports to the U. S. S. R.

On October 27, 1931 a new trade treaty was concluded with *Iran*, the first made by the Iranian Government since the publication in 1930 of the Law on the Iranian State Monopoly of Foreign Trade. The treaty, which was later renewed, was also based on the reciprocal barter principle. It established quotas for the import of the most important products. The U. S. S. R. exports to Iran cotton goods, agricultural machinery etc. and imports wool, skins, rice, dried fruits, etc.

On January 20, 1925 an economic agreement was signed with *Japan*, article 4 of which reads:— "Without prejudicing the right of each contracting party to regulate the international trade of his own country, it is agreed that neither of the two contracting parties shall apply, to the disadvantage of the other country, measures of prohibition, restriction, or taxation liable to impede the development of exchange, economic or otherwise, between the two countries. Both countries, in fact, intend to apply the most favoured nation clause to the trade, navigation, and industry of each country.

By a credit agreement of 1930 Japanese industry received contracts from Russia amounting to 41 million yen. To enable this credit to be financed the Japanese Government undertook to guarantee the loan.

Before the War Russia's balance of trade with Japan was favourable. Russia's chief exports to Japan were foodstuffs and semi-manufactured goods such as cereals, fish, oilcakes, linseed, fertilizers, raw and sawn wood, etc. Japan exported to Russia her surplus agricultural output such as rice, vegetables and fruits, and also certain industrial products. At present the U. S. S. R. balance of trade with Japan is unfavourable, since in payment to the U. S. S. R. for the Manchurian Railway Japan has agreed to employ 93.3 million yen of the purchase price in supplying goods to the U. S. S. R., starting from 1936. By the East China Railway Treaty, consignments of goods must have been exported by March 23, 1938.

Finally, on August 4, 1937 a trade agreement—one of the most important—was concluded with the *United States* by which the United States concede unconditional and unrestricted most favoured nation treatment to exports from the U. S. S. R. Thus Soviet exports enjoy every benefit (and not only as regards

the amount of the tariff, as was the case before July 13, 1935) at present applied by the United States to imports of goods from other countries. Thus by this treaty the U. S. S. R. enjoys the preferences accorded since 1934 to other nations by the Hull series of trade treaties.

The reduced tariffs apply particularly to linen goods, sawn timber, caviare, manganese ore, matches, etc., which are some of the principal Soviet exports.

In August 1938 this treaty was extended for 1939 and the Soviet Union agreed to buy goods from the United States up to a value of at least 40 million dollars, and at the same time to reduce exports of coal to the United States to 400,000 metric tons.

The signing of this treaty has been very favourable to the development of trade between the two countries. In 1929 U. S. S. R. exports to the United States amounted to 4.6 of total Soviet exports. By 1937 this figure had risen to 7.8 per cent. In the same years Russian imports from the United States were 20.1 per cent and 18.2 per cent., the United States taking first place as importer to Russia in 1937.

This covers almost all the countries whose trade relations with the U. S. S. R. are regulated by treaties or economic agreements. In addition there are a number of other countries such as the Netherlands, Switzerland etc. where trade with the U. S. S. R. is of considerable importance but is not yet directly regulated.

Volume and character of the foreign trade of the U. S. S. R.

The aggregate volume of foreign trade of the U. S. S. R. over twenty years, from the first years of the revolution to 1937 inclusive, in comparison with pre-war trade is shown in Table I on the following page.

As the table shows, foreign trade and especially exports ceased almost completely in the first period of revolution, the years of the economic blockade and of greatest inflation. In 1919 exports amounted to 0.4 million roubles and imports 14 million roubles. The NEP (New Economic Policy) introduced in 1921 and good harvests in 1922 and 1923 led to an increase in foreign trade, and by 1925 imports were greater than in 1913 by over a half. Exports however were only about a third of the pre-war figure.

In 1930 Russia's foreign trade reached the record figure of 9 milliard roubles, exports amounting to 4 ½ milliard roubles, a record for the post-war period. But from 1931 total foreign trade decreased from year to year until 1936 when it began to rise again, reaching in 1937 half the 1931 figure. The largest imports since the war were in 1931 at the height of the world economic crisis. Imports rose again in 1935-37 though still to only a third of the 1931 figure. The depression and trade policy in general led to a reduction of Russia's foreign trade and compelled her to reduce imports as much as possible. This tendency is one of the characteristic features of Russia's foreign trade relations with the world market.

TABLE I. — *Foreign Trade of the U. S. S. R., from 1918 to 1937, compared with the 1909-13 average.*

(Millions of gold roubles, at the exchange rate fixed in April 1936).

Year	Expots	Imports	Total Transactions	Balance of trade
Average 1909-1913	6,513.9	4,994.1	11,508.0	+ 1,519.8
1913	6,596.4	6,022.5	12,618.9	+ 573.9
1918	35.5	460.8	496.3	- 425.3
1919	0.4	14.0	14.4	- 13.6
1920	6.1	125.7	131.8	- 119.6
1921	88.5	922.9	1,011.4	- 834.4
1922	357.4	1,181.7	1,539.1	- 824.3
1923	954.8	627.2	1,582.0	+ 327.6
1924	1,476.1	1,138.8	2,614.9	+ 337.3
1925	2,664.4	3,620.9	6,285.3	- 956.5
1926	3,173.7	3,016.5	6,190.2	+ 157.2
1927	3,267.0	3,320.5	6,587.5	- 53.5
1928	3,518.0	4,174.6	7,693.5	- 655.7
1929	4,045.8	3,857.0	7,902.8	+ 188.8
1930	4,539.3	4,637.5	9,176.8	- 98.2
1931	3,553.1	4,839.9	8,393.0	- 1,286.8
1932	2,518.2	3,083.5	5,601.7	- 565.3
1933	2,167.5	1,525.1	3,692.6	+ 642.4
1934	1,832.4	1,018.0	2,850.4	+ 814.4
1935	1,609.3	1,057.2	2,666.5	+ 552.1
1936	1,359.1	1,352.5	2,711.6	+ 6.6
1937	1,728.6	1,341.3	3,069.9	+ 387.3

(1) Prices of goods for the years 1918-24 are calculated on the basis of the 1913 price level while from 1925 they are given in the prices of the corresponding year. For 1913 exports of platinum are included but for post-war years total exports do not include exports of platinum.

In this respect, a consideration of the volume of the foreign trade of the U. S. S. R. over the main periods of her economic development is very instructive. These periods are 1. the period of war communism and the NEP, 1918-28; 2. the period of the first Five Year Plan, 1929-32; and 3. the period of the second Five Year Plan, 1933-37.

 TABLE II. — *Exports and Imports in the three main periods of economic development in the U. S. S. R.*

(Millions of roubles at the April 1936 rate of exchange for foreign trade settlements).

	Period of war communism and NEP 1918-28	First Five Year Plan 1929-32	Second Five Year Plan 1933-37
Exports	12,023.9	18,175.3	8,696.9
Imports	14,429.0	20,592.5	6,294.1
Total transactions	26,452.9	38,767.8	14,991.0
Balance	- 2,405.1	- 2,417.2	+ 2,402.0

This comparison shows that in the first Five Year Plan foreign trade reached its highest point with almost 39 milliard roubles, but the balance was still somewhat more unfavourable than in the period of war communism and NEP. The corresponding figures for the second Five Year Plan are not only lower than those for the period of war communism and NEP, but also lower than those for the first Five Year Plan. Indeed, exports during the second Five Year Plan are less than half exports in the first Five Year Plan, and imports less than a third in the same period. But the main difference is that in the period of war communism and NEP total trade showed an unfavourable balance of 2.4 milliard roubles and the first Five Year Plan almost the same, while in the second Five Year Plan total trade showed a favourable balance of 2.4 milliard roubles. In this latter period exports fell less than imports, leaving a favourable balance of trade in each of the five years of the second Plan.

This development in foreign trade reflects profound changes in the structure of the Soviet economic system. The U. S. S. R.'s economic policy aimed, as is well known, at industrializing the country as much as possible within a short time and at developing the technique and mechanization of agriculture; and for the most part this could only be accomplished by importing a great variety of machines and equipment from abroad. The main aim of foreign trade was the importation of necessary manufactured goods. Exports only served as a means of satisfying commercial requirements in accordance with this aim.

Sometimes, as in 1930 with the prices of cereals, export prices had to be kept lower than world prices; for it was not the immediate return that was important but the realization of the industrial plan for the country as a whole. This was the guiding principle during the first Five Year Plan. The result was an adverse balance for the value of the imports required generally exceeded that of exports. Exports had to be pushed by every means, not to obtain a favourable balance of trade, but, to repeat, to increase further imports of machine equipment and so by means of a temporary large dependence on foreign supplies to organize the country as quickly as possible on a permanent basis of economic independence.

In 1931 imports of machines into the U. S. S. R. amounted to a third, and in 1932 to almost a half, of total world exports of all machines (with the exception of motor cars). Probably no country had ever before imported in so short a period as five years as many machines as did the U. S. S. R. during the first Five Year Plan. Meanwhile the supply of machines to agriculture has steadily increased. In 1929 only about 500 tractors were in use in agriculture. By 1938 the figure had already risen to almost half a million (454,000). In 1936 there were 50,300 combine harvesters and in 1938 the figure had risen to 153,500, etc. As a result of the increased home output imports of these machines in the second five year period have fallen to almost nothing.

This fall in imports reduced Russia's foreign indebtedness from the maximum of 1,400 million roubles in 1931 to 375 million roubles in 1937. Since then it has sunk still further and at present total indebtedness abroad is barely twice the 200 million roubles paid in 1913 in interest and amortization on Russian foreign debts alone.

In 1935, for the first time in her 18 years' existence, the U. S. S. R. had a favourable balance both of trade and of payments. Before the War a favourable balance of trade was accompanied by an unfavourable balance of payments owing to the large sums which Russia had to pay abroad for the service of her foreign debts. Before the War Russia's balance of payments was largely dependent on the condition of the harvest, and exports and prices of cereals. To-day, as we shall see shortly, Soviet exports are much less dependent on exports of cereals, while their composition has become much more varied.

In this context it may also be mentioned that the output of gold in the U. S. S. R. has risen from 53,000 kg in 1930 to from 240,000 to 245,000 kg in 1937 and at present represents about a sixth of the world output. The U. S. S. R. therefore is the second largest producing country, coming next to South Africa, though at a considerable distance. With the present difficulties in the international exchange of goods and money this steady increase in the supplies of gold in the U. S. S. R. has considerable significance for the country, especially as regards her currency and the development of her foreign trade.

A further tendency of Russia's foreign trade is the fall in the percentage share of exports in the total production of the country. This is a result of the increasing consumption of the goods within the country. In 1913 exports (in terms of value) amounted to 11.6 per cent. of the total output; in 1930, the year of the greatest volume of exports from Russia, this proportion was only 3.5 and had fallen in 1938 to 1 per cent. At present only 1 per cent of the total output of cereals is exported, compared with 12.7 per cent. for wheat in 1913, 34 per cent. for barley and 28.3 per cent. for maize. At present Russian production is turning more and more to the rapidly developing home market.

The following table shows the quantities of cereals and legumes exported before the War, in the NEP period, and during the first and second Five Year Plans.

TABLE III. — *Exports of Cereals and Legumes in the four different economic periods:*

(Thousands of metric tons).

Crops	Average 1909-13	Average 1923-24/1927-28	Average 1929-32	Average 1933-37
	Economic year		Calendar year	
Wheat	4,239	554	1,395	516
Rye	655	416	544	122
Barley	3,718	326	682	333
Oats	1,088	54	191	88
Maize	763	145	118	52
Total for cereals . . .	10,463	1,495	2,930	1,111
Legumes	370	55	92	67

Compared with the pre-war period, exports of all cereals and of legumes have fallen off greatly since the war. This was especially so in the NEP period when agriculture, which had been ruined by the years of war, revolution and hunger was only concerned with reconstructing its productive capacity.

Thus during the First Five Year plan exports rose relatively, exports of wheat reaching about a third of the pre-war figure, and of the five main cereals taken together (wheat, rye, barley, oats and maize) somewhat over a third. During the second Five Year Plan exports fell even lower than in the NEP period. The reasons for this will be shown in the discussion on exports of wheat.

The following table shows the value of exports of the chief agricultural products for each year from 1920 to 1937, compared with the average for the years 1909-13.

TABLE IV. — *Exports of the Main Agricultural Products.*

(Millions of roubles at the April 1936 rate of exchange).

Year	Cereals	Flax, flax-twine and linen cloth	Cotton and cotton goods	Butter	Sugar and sugar products	Wood and wood products	Skins and furs.
Average 1909-13	2,619.7	343.8	147.1	272.8	179.3	635.5	31.7
1920.	0.9	1.9	—	—	0.0	2.2	0.0
1929.	43.9	222.6	195.1	135.8	150.5	668.0	467.0
1930.	882.4	155.0	205.5	46.0	118.3	743.5	336.6
1931.	658.9	85.8	203.1	106.4	143.2	497.5	246.2
1932.	228.1	100.4	226.7	69.5	56.1	352.7	185.3
1933.	176.9	97.1	136.8	53.5	24.3	336.1	168.9
1934.	83.6	95.3	108.0	44.5	20.0	391.1	141.3
1935.	161.9	91.7	75.2	43.0	23.9	305.6	132.0
1936.	35.9	81.4	67.4	42.1	36.8	359.5	155.1
1937.	257.6	54.8	130.7	31.8	38.5	437.8	153.6

This shows that exports of wheat, even the maximum quantity of 1930, were only a third of the 1909-13 figure. They then fell still further but later rose to a value of 257.6 million roubles in 1937, amounting to a little less than a third of the 1930 figure. Exports of butter and sugar reached their highest point in 1929 but they were still less than in 1909-13. The returns from exports of a large number of other goods, however, such as wood, furs and skins, and cotton in post-war years have been higher and sometimes considerably higher than before the War. For example in 1930 exports of wood reached 743.5 million roubles compared with 635.5 million roubles before the War. The value of skins and furs were 467 million roubles in 1929 against 31.7 million roubles before the War. In 1932 exports of cotton and cotton goods reached the record value of 226.7 million roubles against 147.1 million roubles before the War.

The Table V shows the percentage share (in terms of value) of the chief agricultural goods in total exports from Russia.

TABLE V. — *Percentage Share of the Chief Agricultural Products in the value of total Exports from the U. S. S. R.*

Product	1913	1932	1936	1937
Wheat	14.8	3.4	0.7	10.8
Rye	2.2	2.3	0.8	2.1
Barley	12.3	2.1	0.6	2.0
Flax	5.7	2.5	5.7	2.8
Cotton and cotton goods	2.9	9.8	4.7	7.4
Butter	4.7	2.8	3.1	1.8
Sugar	1.3	2.3	2.4	2.0
Wood and wood products	12.3	15.0	20.5	25.4
Skins and furs	—	7.5	7.6	6.2

The percentage shares of cotton, wood, furs and skins have therefore risen somewhat in comparison to 1913 whereas those of wheat, barley, butter and in part also flax have fallen considerably.

These changes are all closely linked up with the altered structure of Russian foreign trade.

Alteration in the composition of Russian foreign trade.

The economic plan of the U. S. S. R., which, as said before, effected among other things a thorough technical reorganization of agriculture, also altered the composition of Russia's foreign trade. In the last few years profound changes have taken place both in the import and export trade. The following table shows the percentage share of agricultural and non-agricultural exports in the total world trade of the U. S. S. R. compared with the figures for 1913.

TABLE VI. — *Percentage Share of Agricultural and Non-agricultural Products in the Total Trade of the U. S. S. R.*

Year	Agricultural goods	Other goods	Year	Agricultural goods	Other goods
1909-13	70.6	29.4	1931	42.1	57.9
1923-24	69.7	30.3	1932	31.9	68.1
1924-25	58.9	41.1	1933	28.8	71.2
1925-26	57.6	42.4	1934	28.4	71.6
1926-27	55.3	44.7	1935	26.7	73.3
1929 (1)	38.9	61.1	1936	20.3	79.7
1930	41.8	58.2	1937	31.7	68.3

(1) Until 1929 the financial year in the U. S. S. R. ran from October 1 to September 30 of the following year. Since 1929 it has coincided with the calendar year.

This table shows that before the War slightly over two-thirds of Russian exports consisted in agricultural goods, and slightly over one third in other goods of which a very important part were exports of unmanufactured wood. Half the agricultural exports consisted of bread cereals with a value of 625 million roubles, out of a total value of world exports of 1,501 million roubles in 1913 ⁽¹⁾. This predominance of agricultural exports was also the outstanding feature of the NEP period. For example in 1923-24 the share of agricultural goods in total U. S. S. R. exports (69.7 per cent.) was still almost as large as in 1913.

In 1924, for the first time in the history of the Soviet Union, wheat was exported, amounting to 40 per cent. of the exports of that time. Other agricultural products such as butter, eggs, etc. were also exported in considerable quantities. But at the same time, non-agricultural products such as wood, coal, manganese ore etc. were also being exported with the result that in 1924-25 59 per cent. of all exports were agricultural and 41 per cent. were non-agricultural. This tendency of agricultural exports to fall off, with a simultaneous increase in other exports, has been continuous and though slow at first, was rapid in the first, and even more so in the second, Five Year Plan.

In 1932 at the end of the first Five Year Plan, agricultural exports had already fallen to approximately a third of total exports, while industrial exports had risen to about two-thirds. Thus the relation between these two main categories of exports was then the exact reverse of that before the War. During the second Five Year Plan this trend became more and more marked, and by 1936 agricultural exports were no more than a fifth of total exports. In 1937, owing to a considerable increase in exports of cereals and cotton, the share of agricultural exports rose to a third, but in the same year the absolute figure for exports of industrial products showed an increase over 1936 of 97.3 million roubles.

Certainly, these figures are not to be analysed with mathematical precision; but they do show clearly the tendency of Russia's foreign trade to concentrate more and more on the export of non-agricultural goods. This means a complete change in the relation of the U. R. S. S. to the world market.

During the first and second Five Year Plans the value composition of both imports and exports, treated according to the various classes of goods (in accordance with the Brussels international classification) both show considerable changes, as shown in Table VII.

The table shows the large and characteristic changes which took place during the second Five Year Plan. Exports of the first class, livestock, which amounted to 2.3 per cent. in 1913, had fallen right off in 1937, and in fact, since 1931. At the same time, imports of this class increased substantially moving from 0.3 per cent. in 1913 to 3.4 per cent. in 1937. This shift is due to the position of stockraising in the U. S. S. R. During the first Five Year

(1) At the pre-war rate of exchange for roubles.

TABLE VII. — *Changes in the Value Composition of Exports and Imports taken by Classes of Commodities at the end of the Second Five Year Plan and before the War.*

(Percentages).

	Exports		Imports	
	1913	1937	1913	1937
1. - Livestock	2.3	—	0.3	3.4
2. - Foodstuffs and drinks	56.8	22.9	13.4	6.4
3. - Raw and semi-manufactured goods	38.7	58.6	51.0	49.9
4. - Manufactured goods	2.2	18.5	35.3	40.3
	100	100	100	100

Plan stockraising in particular underwent a crisis the causes of which were many and complex and which lasted into 1935. From then on there has been a considerable increase in the number of cattle owing to a series of measures taken by the Government.

The share of the second class — foodstuffs and drinks — has also been greatly reduced. In 1913 exports of these amounted to more than a half (57 per cent.) of all Russian exports whereas in 1937 they were only 23 per cent. This was not only a result of the development in recent years of the capacity of the home market, but also of the heavy fall in the prices of these commodities on the world market. Imports of these products also fell considerably: from 13.4 per cent. in 1913 to 6.4 per cent. in 1937.

The share of raw materials and semi-manufactured goods in total exports increased during this period by one and a half times, rising from 38.7 per cent. to 58.6 per cent. At the same time imports of goods in this class have fallen off somewhat, moving from 51.0 to 49.9 per cent. Raw and worked wood, petroleum, flax, cotton goods etc. all come into this class. At present they take first place in exports from the U. S. S. R., while in 1913 they were second at 39 per cent. of total exports. They were therefore considerably less important than exports of foodstuffs and drinks which in 1913 took first place with 57 per cent.

Undoubtedly, however, the most complete transformation has occurred in the foreign trade in manufactured goods. Exports of these rose from 2.2 per cent. in 1913 to 18.5 in 1937, mainly owing of the industrialization of the country. But at the same time, imports of manufactured goods, owing to the increased imports of machinery, consisting mainly of newly invented machines, rose from 35 per cent. in 1913 to 40.3 per cent. in 1937.

This change is characteristic and indicates a reorientation of Russia's foreign trade, the underlying cause of which is closely bound up with the economic

development of the U. S. S. R. and the slow transformation of what was an agricultural country into an increasingly industrial one. It is characteristic that the total value of agricultural production (calculations being based on 1926-27 prices) increased from 12.6 in 1913 to 15.8 milliard roubles. Over the same period the value of industrial production rose from 10.3 to 59.3 milliard roubles, nearly six (5.8) times greater.

The following table shows alterations in the structure of the Russian economic system over the period 1913-36.

TABLE VIII. — *Alterations in the Composition of Production and Exports of the U. S. S. R. during the last 24 years.*

Year	Percentage share of industry in the total output of the U. S. S. R.	Percentage share of industry in exports from the U. S. S. R.	Percentage share of agriculture in the total output of the U. S. S. R.	Percentage share of agriculture in exports from the U. S. S. R.
1913	42.1	30.0	57.9	70.0
1929	54.5	61.1	45.5	38.9
1930	61.6	58.2	38.4	41.8
1931	66.7	57.9	33.3	42.1
1932	70.7	68.1	29.3	31.9
1933	70.4	71.2	29.6	28.8
1936	79.2	80.1	20.8	19.9

This table shows the continuously increasing importance of industry in the production of the country during the last quarter of a century. The export trade shows a parallel movement, its composition approximating more and more to that of national production.

In 1913 industry's share in the total national production was 42.1 per cent. while it supplied only 30 per cent. of exports. By 1936 these percentages had risen to 79.2 and 80.1 respectively. The corresponding figures for production and exports of agricultural goods were 57.9 and 70 per cent. in 1913 compared with 20.8 and 19.9 per cent. in 1936.

Thus the general economic plan has ensured that exports were more and more closely adapted to changes in the internal structure of the economic system.

Certain conclusions regarding the economic possibilities of agricultural exports from Russia before the War and at the present time could be drawn from this fact; but to do so would be outside the scope of this short study.

(To be continued).

M. TCHERKINSKY.

INTERNATIONAL CHRONICLE OF AGRICULTURE

CUBA

Cuba's economic position depends mainly upon the prosperity of the sugar industry. In 1902 the United States granted a preference to Cuba of 20 per cent. which came into force in 1903, and from this date there was a strong tendency towards monoculture at the expense of other branches of production which had previously flourished (coffee) and which, though they did not entirely disappear, remained stationary alongside the dominant crop (fruit and vegetable growing, animal husbandry).

While sugar growing prospered, the whole economy of the country was based on the profits which could be made from this one crop, not merely manufactured goods but even supplies for immediate consumption being bought from abroad.

In terms of value, exports of sugar have always formed a very high percentage of total exports. In the five years 1909-13 they averaged about 70 per cent. rising to 89 per cent. in the five years 1919-23. During the next ten years they fell, being 75 per cent. for the five years 1929-33, but rose again to 82 per cent. in 1936.

This tendency was disastrous for the country even when times were prosperous. Cuba's economic life has become extremely sensitive to fluctuations in the trade cycle while the home market is so disorganised that very often producers do not trouble about the quality of goods supplied to this market and even the rural population thinks nothing of buying tinned and imported foodstuffs in place of home-grown products.

The producers and consumers needed educating, the more so as the country had to alter its policy completely when it appeared that the old prosperity based on sugar could not return.

The output of certain crops had to be expanded and new ones introduced; first to supply the country's own needs and secondly, if possible, to export. It was sought, often with success, to reduce and even eliminate imports of certain goods by increasing the output of some goods (rice), producing new ones (butter) or by setting up new industries. Although these alternatives are still far less important than sugar in Cuba, they have, with mining operations and receipts from tourists, to some extent helped to maintain the country's economic equilibrium in the difficult position in which the crisis in the sugar trade placed it.

The table on the following page shows the comparative importance of the principal items of Cuban export trade.

The predominance of the United States in this trade is shown by the following figures giving the percentage of the total value of Cuban exports going to the United States:

1932	1933	1934	1935	1936
71.25	67.67	75.26	79.31	78.72

*Percentage Share of the Principal Products in the Total Value
of Cuban Exports, 1932-36.*

	1932	1933	1934	1935	1936
Sugar and other sugar cane products:—					
Distilled products	0.88	1.48	3.56	1.38	0.89
Raw and refined sugar	66.90	68.58	68.24	70.18	72.71
Molasses	4.68	4.01	5.63	7.44	8.36
<i>Total . . .</i>	<i>72.46</i>	<i>74.07</i>	<i>77.43</i>	<i>79.00</i>	<i>81.96</i>
Tobacco:—					
Raw	12.87	12.04	9.18	9.06	5.91
Manufactured	3.15	3.83	4.25	3.20	2.70
<i>Total . . .</i>	<i>16.02</i>	<i>15.87</i>	<i>13.43</i>	<i>12.26</i>	<i>8.61</i>
Fresh fruits	3.51	2.06	2.57	2.05	1.98
Vegetables and cereals	2.74	1.51	0.94	0.92	1.05
Other commodities	5.27	6.49	5.62	5.77	6.40
<i>Grand Total . . .</i>	<i>100.00</i>	<i>100.00</i>	<i>100.00</i>	<i>100.00</i>	<i>100.00</i>

Sugar ⁽¹⁾.

For the last few years before the War sales and prices of sugar depended on three markets—the local market, the United States market and the world market. The population of Cuba is small and the home market of limited importance. But the very existence of sugar growing in Cuba depends upon the possibilities of selling in the United States market and upon these depend also the quantities which must be placed on the world market and perhaps the need for restricting output. Until a short time before the War the United States market absorbed almost the whole of Cuba's output of sugar, which enjoyed the preferential tariff of 20 per cent. conceded by the Reciprocity Treaty of 1902 mentioned above.

However, Cuba must always meet competition on this market from United States producers of beet sugar, the sugar cane growers of Louisiana and Florida and from the sugar cane planters of Puerto Rico, the Philippines and Hawaii. The amount of preference granted must always depend on a compromise between protecting the interests of these producers and the desire on the part of the United States to maintain

⁽¹⁾ There are several recent works covering the development of the sugar crisis in general and in Cuba in particular. Here we shall confine ourselves to sketching in those facts necessary for an understanding of the position of sugar production in Cuba during the years 1937 and 1938.

economic and social, and consequently political, equilibrium in Cuba, and the latter's power of purchasing American commodities.

Cuba's exports to Europe before the Great War were small, but as the War proceeded they suddenly leapt to enormous proportions and the demand from the belligerent nations led to a rapid increase in output (4,097,771 metric tons ⁽¹⁾ in 1919). Prices reached such a level that the importing countries requested the United States to supervise prices and so keep them at a reasonable level. When, in 1919 this supervision was abolished, prices rose steeply and production expanded beyond all rational limits. But the great demand which had caused this rise did not outlast the War by very long, and Cuba found herself with very large stocks and faced with prices which had fallen from over 20 cents per lb. in 1920 to less than 2 cents in 1922. Beet growing did not recover rapidly in Europe, however, and as consumption increased there was a recovery from 1923 to 1925 which led Cuba to expand her output again, until it reached 5,272,268 metric tons in 1925.

Over the same period both Europe and the United States were reinforcing existing measures of protection and introducing new ones. (United Kingdom: tariffs, subsidies, preferences). Europe was increasing her output of beet and gradually approaching her pre-war level of production. At the same time, the cane planters of Puerto Rico, Hawaii and the Philippines and the beet growers of the United States were also increasing their output. Thus Cuba's market shrank simultaneously both in Europe and in the United States. At first she tried to remedy this by restricting her own output and then, in 1930, owing to the economic crisis and the increasing protectionism in the United States and elsewhere, she decided, with the principal countries selling sugar on the international market, on the Chadbourne Plan, which came into force for the 1931 crop. Despite the sacrifices conceded by the signatories, however, the prices of sugar continued to fall in 1931-32.

In these circumstances the United States gave her assistance. By the American sugar law of 1934 Cuba obtained a fixed quota which guaranteed her being able to place on the American market about 272,155 metric tons more than she had been able to do under the old tariff. Further, in 1934 a presidential decision reduced the customs tariff on Cuban sugar (96° polarization) from 2 to 1.50 cents. per lb. (Later, by the reciprocity trade agreement of August 1934 it was reduced to 0.90 cents as against the ordinary tariff of 1.875 cents.).

The Chadbourne agreement terminated on September 1, 1935. Its success had been small but the need for international collaboration remained and the International Sugar Conference, convened by the World Monetary and Economic Conference, concluded a new agreement on May 6, 1937 ⁽²⁾. Cuba was granted a quota of 940,000 metric tons for the free international markets. This quota equalled her exports for 1936. It was higher than that granted by the Chadbourne Plan and was renewed by the October 1937 session of the International Sugar Council.

With fixed quotas for the American and free international markets, and knowing the volume of local consumption, Cuba is in a position to adjust her output to the

(1) Owing to the diverse standards of weight used in the original sources, the figures in this section have all been converted into metric tons.

(2) For a full account of the London Conference see ROBERTSON, C. J., *The International Sugar Agreement*. *Monthly Bulletin of Agricultural Economics and Sociology*, International Institute of Agriculture, October 1937, pp. 358-368.

maximum quantity marketable and to avoid overproduction. Each year the Cuban Institute for the Stabilisation of the Sugar Market, which was founded on May 6, 1931 and represents all producers, fixes the quantity to be produced, arranges how this shall be distributed between the different producers and distributes it for export according to the different agreements and quotas fixed. The Institute's proposals must be approved by the Government before being carried into effect. The output authorized for 1937-38 was 2,714,531 metric tons, and the actual output 3,023,436 metric tons. A presidential decree of January 1, 1939 fixed the output for 1939 at 2,481,281 metric tons.

In April 1938, when the grinding of the sugar cane had been completed, prices on the American market fell lower than they had been for years and those on the world market fell below what they had been before the international agreement had been signed. The resulting average price was disastrous for Cuba and the larger part of the 1938 crop was still unsold in April.

The opinion in Cuba was that the quotas fixed by the international agreement should again be reduced. They were reduced by 5 per cent. at the April 1938 session of the International Sugar Council and by a further 5 per cent. at the July session of the same year, the second reduction applying from September 1, 1938. The quota for the free market thus fixed for Cuba for the year September 1, 1938-August 31, 1939 is 831,763 metric tons. The Cuban quota for the United States was fixed on June 4, 1938 at 1,780,596 metric tons.

A new market has been opened up to the Cuban refiners in the United States, where they are allowed to sell refined sugar for the production of fruit jams for export as part of the world quota and not as part of the Cuban quota to the United States. The importers must re-export within twelve months.

Besides raw and refined sugar, Cuba exports molasses, a by-product of the manufacture of sugar. But the export of molasses, which had seemed to be a solution to the problems raised by the sugar crisis, has itself become a difficult problem. The price of molasses is so low that production is no longer remunerative, but Cuba is loth to give it up as molasses production offers a supplementary occupation to the workers. A Government decree has even prohibited its manufacture at the same time as that of sugar in order to prolong the season which is, in any case, very short. Further, it is feared that by reducing manufacture and exports, production in other countries would be encouraged, and that by raising the price greatly the market would be captured by competitors supplying cheaply other raw materials for the production of synthetic alcohol. It is suggested that instead of being exported, molasses should be used for the manufacture of alcohol in Cuba itself.

The American Sugar Law of 1934 should have expired on December 31, 1937. The position which would have arisen if this law had not been prolonged had been causing much anxiety in Cuba and the news that the President of the United States had signed on September 1, 1937 a further law maintaining the quota systems was received with much satisfaction. The Cuban quota was fixed at 1,734,062 metric tons, 29 per cent. of the United States requirements. Further, the prices of sugar on the United States market, which are regulated by the Secretary of Agriculture, were to be fixed in relation to three other staple commodities. Finally, Cuba will share in all alterations of the quota, with the exception that if the output of the Philippines is insufficient to cover the quota allotted to that country, the deficit will be divided between the other suppliers to the exclusion of Cuba. As a result of this regulation the Cuban quota was raised to 92,033 metric tons in September, 1937. This represents Cuba's share in the additional quotas allotted to make up the deficit in the quota for American beet.

The most important event affecting Cuba's sugar industry in 1937 was the passing on August 25 of the *Law on the Coordination of Sugar Production*. This law which carries into effect an important part of the "Three Year Plan" ⁽¹⁾, was drawn up by a mixed committee of representatives of the sugar industry and members of Congress. One of its main aims is to protect the small grower. *Inter alia*, each grower is entitled to grind a quantity of sugar equal to his entire 1937 estimate, up to a maximum of 30,000 *arrobas* (1 *arroba* = 11.5 kg.). A deduction of 6 per cent. is made from the quotas of growers whose 1937 estimates exceeded 500,000 *arrobas*, and one of 12 per cent. from the quotas for sugar cane grown on land belonging to factories. If these deductions are insufficient, the deficiency is made up from a special small growers' protective fund.

In return for these special advantages small growers must devote part of their land to food crops.

The existing moratorium laws are extended to cover debts incurred by growers before June, 1933 as long as the debts remain unadjusted. Pending such adjustment by mutual consent, growers are not required to pay more than 20 per cent. of the net output of their plantations, and not more than 60 per cent. after adjustment.

Leases are extended as long as crop restriction lasts, provided rentals are paid regularly, cane is supplied and production maintained at a minimum of 30,000 *arrobas* per *caballeria* planted (1 *caballeria* = 13.42 hectares). Current rentals remain in force if they are not higher than those provided in the Act. If there has been no contract, rentals will not be lower than 70 dollars per *caballeria* while sugar is sold at the price obtaining when the law was passed. Rentals for irrigated lands, are increased by 50 per cent. Wages of those working on the crop were increased the increases being graded according to the average yields obtained by each mill in the three preceding years. Minimum wages are fixed for the crop season and also for the dead season.

Retail prices at stores in the factories must not be higher than those normally charged in the nearest town plus transport costs. Mill owners and operators of plantations must provide free sites for the erection of employees' and workers' cooperatives.

Mills and plantations with unused lands must place a reasonable proportion of these, free of charge, at the disposal of the workers, to enable them to grow food crops during the dead season.

Tobacco.

Cuba's most important product after sugar is tobacco. *Vuelta Abajo*, used for making cigar wrappers, and Havana cigars in general take first place. About half the output is consumed in the country, but 25 million cigars are exported per annum. The United Kingdom buys about a third of these, but the greater part goes to the United States. Nevertheless, the complaint is made in Cuba that the markets are neither as dispersed or as large as the excellent quality of the tobacco warrants. This is attributed partly to tariffs, which prevent this product from being imported into many countries, but also to a change in consumers' tastes, since for some time cigarettes have been preferred to cigars and oriental tobacco to the dark tobacco of Cuba. The consular agents abroad who have studied the question on the spot recommend that trade agreements should be reached with countries not producing tobacco, and that

⁽¹⁾ See p. 169.

a Cuban cigarette of oriental type more adapted to the changed taste of consumers should be manufactured. A tobacco experimental station has been set up to study questions relating to tobacco. It is also hoped to set up a national cigar factory.

Fruit and vegetables.

Cuba has been engaged in the production and export of fruits and vegetables for quite a long time, though until recently the trade has been of little importance. In the last few years, however, it has greatly increased, especially on the Isle of Pines. Exports of these products go mainly to the United States. The crops are earlier in Cuba than in the latter country and can therefore be easily marketed. In 1937 an agreement was reached between the fruit and vegetable producers of Florida and the Association of Horticulturists and Fruit and Vegetable Exporters of Cuba on the rules and seasons for imports into the United States. This agreement enables Cubans to market their products without harming American producers. The vegetables chiefly exported are tomatoes, egg-plants, potatoes, green peppers, Lima beans, cucumbers, ochras, squash and string beans. Large quantities of grape-fruit, avocado pears, pine-apples and bananas are also exported. The majority of these fruits go to the United States, though the Cuban grape-fruit is one of the most popular on the London market.

In May 1938 new possibilities were opened up to Cuban fruit growers by the *Compañía Sud-Americana de Vapores* offering to arrange for its vessels to touch Havana on their way from Chile to European ports from this date. The boats are fast and equipped for this type of freight. They are supplied with refrigeration equipment. Thus pine-apples, avocado pears, oranges and grape-fruit may find new outlets.

To improve the quality of fruit and vegetable exports and to help them to meet competition from other countries more successfully, a presidential Decree of December 16, 1936 imposed rules for the grading and packing of fruits and vegetables for export.

Coffee.

Coffee was introduced into Cuba at the end of the 18th century and was of great importance until the expansion of sugar cane growing and the absence of tariff protection led to the destruction of many plantations. After the sugar crisis, however, there was a movement to return to coffee growing. Sheltered by protective duties, output was soon adequate to satisfy the home demand at remunerative prices, but it was not long before overproduction occurred and surpluses of coffee, whose quality and cost of production made competition difficult with that from other sources, had to be placed on foreign markets. In 1934 the Government founded the Cuban Institute for the Stabilisation of the Coffee Market to study all questions relating to the cultivation, preparation and sale of coffee. In July, 1935 exporters were required to obtain export permits and holders of raw coffee to withhold 25 per cent. of their stocks from the market. Such stocks could only be marketed by the Institute. Some time later the 25 per cent. was raised to 50 per cent. The Department of Agriculture was then authorized to fix in April of each year the percentage of coffee to be held off the market, calculations being based on the official estimates of home production and consumption. Minimum prices were also fixed for the producers of non-decorticated coffee and maximum and minimum prices for middlemen. A series of taxes on coffee were introduced to cover the costs of organizing the coffee market.

In August 1937 the representatives of fifteen countries met at Havana for the second Panamerican Coffee Conference. The conference decided to eliminate poor quality coffees in order to stimulate consumption and raise the price without having recourse to crop restriction ⁽¹⁾. One of the Conference's decisions to which Cuba adhered is the payment to the Panamerican Coffee Office for a propaganda fund, of 5 cents on each 60 kg. sack exported. The lowest quality which might be exported was also decided. In addition to the Panamerican Conference, two national coffee conferences were held at Cuba in 1937 and 1938, to consider measures for improving coffee growing and making it more remunerative. The second conference recommended the inclusion of coffee in all treaties of commerce, particularly in those concluded with countries having a controlled economy. Before the second conference, a decree of January 10, 1938 had introduced an export premium to compensate for the low prices of coffee. The Department of Agriculture and the Institute for the Stabilization of the Coffee Market pay the premium (0.25 dollars per quintal of 100 pounds of 460 grams exported) out of a special fund.

The various measures taken have improved the general position of the market, though that of producers still leaves much to be desired.

Stock-raising.

In 1937 Cuba had from 2,600,000 to 2,900,000 head of *cattle*. Stockraising is already sufficient for national requirements, and must now even find outlets for a surplus of 50,000 head of cattle annually. A presidential Decree of December 16, 1937 set up a commission for the protection of home stockraising. To encourage the rearing of *pigs*, for which the natural conditions of the country are suitable, a decree of January 2, 1937 allowed pigs of the main breeds to be imported duty free, for the purpose of improving Cuban stock.

The output of *cheese* has increased considerably during the last few years. Up to 90 per cent. of the demand for *condensed milk* is covered by home production. The output of *butter* has so much increased since 1928, when 1,424,164 lbs. of butter costing 585,871 dollars had still to be imported, that in 1936 651,512 lbs., worth 132,612 dollars, were exported. The home output is estimated at 3,500,000 - 4,500,000 lbs.

Other animal products forming important and relatively stable exports are *skins and hides*. These exports could probably be substantially increased by improving methods of stockraising and of preparing the skins and hides, and above all by careful classification before placing them on the market.

Henequen.

Henequen, a strong fibre which is popular for manufacturing twine and cord, is obtained from the *Agave fourcroydes*. It is grown chiefly in Mexico, but the climatic, soil and rainfall conditions in Cuba are well suited to its cultivation, while low costs

⁽¹⁾ For further details see ARCOLEO, F., The International Organization of the Coffee Market, *Monthly Bulletin of Agricultural Economics and Sociology*. International Institute of Agriculture, September 1938, pp. 419-422.

of transport to the United States encourage the expansion of this crop. In 1937 there were six large plantations supplied with the equipment needed to prepare the fibre. About 8,000 acres are planted and there are still great possibilities of extending the acreage under this crop. The annual output of fibre is about 8 million lbs. Both the raw fibre and twine and cord are exported.

Rice.

Cuba's climate is suitable for rice growing, and since 1929 much has been done to increase the output of this crop. Rice may either be grown on irrigated land or as a dry crop, if suitable varieties are chosen. In 1938 500,000 quintals of rice were produced, but 3,500,000 quintals, valued at 12 million pesos, were still being imported. To produce this amount an average of 15,000 *caballerias* would have to be cultivated. This would give work to 175,000 persons, thus reducing unemployment and would also enable large areas, hitherto under sugar cane, to be used for other purposes and to be cultivated during the idle season.

Silk.

Silk production is one of the domestic industries which it is sought to introduce to supplement the returns of the small farmer and to give him employment during the dead season, which is long in Cuba. The mulberry remains green throughout the year in Cuba, so that by a careful choice of methods of rearing silkworms production can be carried on the whole year round. Tests are already being carried out to find the varieties of mulberry best suited to Cuba's climate, on methods of growing them, and on the most suitable varieties of silkworms and the diseases to which they may be subject. A spinning and weaving establishment has been set up to instruct a number of workers who will later teach others the technique of silk manufacture.

The Department of Agriculture has planted 200,000 mulberry trees which, like the silkworm eggs, have been distributed between the farmers in the area. The mulberry, which also supplies an excellent livestock feed, may, as in the case of rice, be grown on surplus lands at present planted with sugar cane.

Wood.

Although the expansion of sugar cane production has led to much deforestation, forests still cover a sixth of Cuba's territory. Cuba is rich in valuable woods such as cedar, mahogany, and ebony, which are exported. The Three Year Plan, referred to below, comprises reafforestation with valuable varieties of trees.

Other products.

Eggs, cacao, honey, maize and especially oilseeds and oil bearing fruits (sunflower, groundnut, sesame, soya and coconut) are becoming more important, especially since the imposition of protective duties on imports of soya oil.

The Three Year Plan.

New crops had been encouraged at different dates well before the publication in 1937 of the Three Year, or Economic and Social Reconstruction Plan. But these earlier efforts did not form part of an organic whole. They were introduced piecemeal mainly for economic and commercial ends. The authors of the Three Year Plan had given much thought to the matter since the coming of the new régime, and they realised that Cuba's real problem is a social one. Only by solving the problem of the land system and general and vocational education can the economic position be improved. The Three Year Plan goes to the very root of the evil, the difficult position of the small farmer, or *colono*, who is generally a tenant, most frequently of the *métayer* type, more rarely owner, but almost always weighed down with debt. Further, the *colono's* tenure of the land is not guaranteed long enough to tempt him to introduce improvements. He cannot obtain credit on advantageous conditions and is often too ignorant to be able to augment his meagre resources through other occupations, even if these are not forbidden by the landowner.

The Three Year Plan, however, is more a general programme than a detailed plan. The different schemes will be carried out progressively by special laws, as has already been done in coordinating sugar production and in the reallocation and settlement of land. The words "three year" do not imply that the schemes will be completed, or even begun, within three years. The intention is rather to study all the problems included in the programme as a whole during these three years and to start carrying some of them out as opportunity arises.

As regards agriculture, the Three Year Plan comprises the following points:—

1. Coordination of sugar production. (See the law on the coordination of sugar production, p. 165.)
2. Land settlement. (See below for the law on State property and the reallocation of land).
3. Restriction of property rights.
4. Regulation of leases of rural properties.
5. Study of mine legislation and production.
6. Study of reafforestation and utilisation of forests.
7. Utilisation of water, irrigation and drainage.
8. Development of farm instruction.
9. Regulation and improvement of stock-raising.
10. Development of bee-keeping and the cultivation of tobacco, coffee and cacao.
11. Expansion of fruit-growing.

The fundamental law for the execution of the Three Year Plan is the *Law on State Property and the Reallocation of Land*, which was signed by the President on December 17, 1937 and came into force with retroactive effect in January, 1938. Lands belonging to, leased by, or granted in concession by, the State, and lands bought by the Government or granted to it for this purpose, will be distributed and settled. To obtain such land, the would-be colonist must be Cuban and the head of a family. Naturalized citizens must have been domiciled in the country for at least ten years. Each head of a family

will receive a maximum of 30 acres of cultivable land. The land may not be distrained upon or transferred. The farmers must live on the new farm for six years, exploit it, lay out an orchard, and follow the advice of the General Office for State Lands and of the Treasury as regards the building of roads, marking of boundaries, etc. The law also contains regulations for the formation of cooperatives.

UNITED KINGDOM

MILK MARKET

About a quarter of the value of the agricultural output of the United Kingdom comes from milk. The value of the milk (and dairy produce) output is greater than all cereals and field crops put together and accounts for roughly a third of the total value of all livestock products.

Value of Milk Output and of Total Agricultural Output ⁽¹⁾.

	1930-31	1931-32	1932-33	1933-34	1934-35	1935-36	1936-37	1937-38
	£ 000	£ 000	£ 000	£ 000	£ 000	£ 000	£ 000	£ 000
England and Wales:								
Milk Output (and Dairy Produce) .	54,970	46,840	49,310	52,080	52,900	54,050	55,760	(*) 58,100
Total Output . . .	202,660	186,990	182,545	198,990	206,045	205,935	220,940	(*) 223,500
Scotland:								
Milk Output (and Dairy Produce) .	6,350	—	—	—	—	8,110	—	—
Total Output . . .	37,743	—	—	—	—	37,875	—	—
Northern Ireland:								
Milk Output (and Dairy Produce) .	2,673	2,766	2,559	2,217	2,461	2,395	...	...
Total Output . . .	12,769	12,531	10,374	10,941	12,305	14,515	...	...

(¹) Excluding state subsidies. (*) Provisional estimate.

The value of the output in England and Wales, about 70 per cent. of which is sold for liquid consumption, fell heavily in 1931 and 1932, but has been rising steadily in recent years. The rise has been due in the main to an increase in prices realised; the volume of output changed little between 1930 and 1935. In the last two or three years there has, however, been an increase also in the volume of output, of about 3 ½ per cent.; the value of the output has risen at the same time by about 5 ½ per cent.

The cause of the increase of the volume of output must be sought rather in changes in the number of cows in milk than in an improvement in yields, for the latest census made by the Ministry of Agriculture shows no tendency for yields to increase. The

Volume of Milk Output ⁽¹⁾.

(Million gallons.)

	1930-31	1931-32	1932-33	1933-34	1934-35	1935-36	1936-37	1937-38
England and Wales	1,263	1,250	1,270	1,270	1,270	1,316	1,314	} (a) 1570
Scotland	163	—	—	—	—	177	—	
Northern Ireland	97	100	102	103	104	104	...	

⁽¹⁾ Excluding milk fed to calves.

(a) Provisional estimate.

average annual yield of milk per cow (excluding milk fed to stock) was 539 gallons in 1931 but only 502 in 1936 ⁽¹⁾; the weather conditions at the time of the 1931 census were, however, much more favourable to milk production than they were at the time of the 1936 census.

Number of Cattle.

(Thousands.)

	1931	1932	1933	1934	1935	1936	1937	1938
England and Wales ⁽¹⁾ :								
Cows and heifers in milk	2,043	2,117	2,179	2,214	2,232	2,227	2,217	2,210
Cows in calf	322	352	358	304	382	405	394	372
Heifers in calf	425	403	418	417	437	443	450	458
Total cattle	6,065	6,358	6,620	6,660	6,541	6,540	6,619	6,658
Scotland ⁽¹⁾ :								
Cows and heifers in milk	346	351	365	369	371	368	365	365
Cows in calf	52	53	53	55	56	56	56	55
Heifers in calf	56	61	66	72	71	71	74	78
Total cattle	1,209	1,233	1,294	1,313	1,318	1,313	1,290	1,308
Northern Ireland ⁽²⁾ :								
Cows in milk and in calf	237	245	246	251	252	250	237	229
Heifers in calf	23	23	25	32	27	25	23	30
Total cattle	681	715	734	769	790	770	730	731

⁽¹⁾ On June 4 each year. — ⁽²⁾ On June 1 each year.⁽¹⁾ On basis of number of cows and heifers in milk and cows in calf.

Milk is unique among the agricultural products of the United Kingdom by reason of its market position. It is by its nature protected from import competition, and in a country whose imports of agricultural produce exceed in value the national agricultural output, it is the only important foodstuff the home production of which covers the total consumption in the country. This latter fact greatly facilitates the organisation of market control by the producers' monopoly, and thus when the Government in 1931 provided for statutory sanction for such control, marketing schemes for milk were soon evolved.

Marketing schemes.

England and Wales. — The milk marketing scheme, England and Wales, approved by Parliament in 1933, established a Milk Marketing Board representing, and elected by, milk-producers. All sales of liquid milk, other than sales by producer-retailers, are now made through the Board which negotiates prices with purchasers on the basis of yearly contracts. When the Board and the representatives of the milk purchasers, the Central Milk Distributive Committee, fail to agree, prices are established in accordance with the judgement of independent persons appointed for the purpose by the Minister of Agriculture. Different prices are charged by the Board according to the use to which the milk is put, the main distinction being between milk sold for liquid consumption, and milk sold for the manufacture of dairy products, etc. No such difference is, however, made by the Board in the prices it pays to the producers. Before the introduction of the scheme the very low prices received for milk sold for manufacture had put producers selling in this market in a very difficult position, and milk from districts, such as the South West of England, where there was a relatively small market for liquid consumption, began to be diverted to the distant consumption centres. Under the scheme the receipts from the markets are equally shared between producers by means of a pooling system, which is, however, on a regional and not a national basis. In each of the eleven districts into which England and Wales is divided for the purpose, the returns from all sales of milk are pooled and shared between producers on a per gallon basis. The proposal that this pooling system should be on a national basis met with strong objection from districts in which a relatively high proportion of the milk there produced is sold in the more profitable liquid market. A step towards a national equalisation of producers' returns was made by the institution of the Inter-regional Compensation Fund; a levy is made on every gallon of milk sold in the liquid market and the proceeds are used to raise the prices paid by the Board to producers in districts where the proportion of milk sold for manufacture is high.

The contract prices for the year October 1938 to September 1939 were fixed in September last by an agreement between the Board and the Central Milk Distributive Committee. The wholesale prices to be paid to the Board for milk for liquid consumption are, on the average, the same as those paid in 1937-38. Some of the monthly prices are, however, different from those of the last contract, changes having been made to give a greater uniformity throughout the year. The wholesale prices of milk for manufacture are also substantially the same; the prices of milk for butter and cheese manufacture are calculated from a formula based on the price of imported butter and cheese, and these formulae have been modified for 1938-39 in such a way as to give a slightly higher price. The contract also prescribes minimum retail prices which vary according to districts. These prices in 1938-39 are to be from $\frac{1}{3}$ d to $\frac{2}{3}$ d higher than last year. In all districts monthly prices have been modified to reduce the seasonal differences, and in south-eastern districts with a population exceed-

ing 25,000 there is now a uniform price of 2s. 4d. per gallon. The system of pooling returns introduced by the scheme led to the transfer of milk from the manufacture of butter and cheese on farms, to the Board. In order to check this the Board, in 1934, made arrangements the effect of which is that farmhouse cheesemakers receive a payment from the Board sufficient to cover the difference between the net value of milk sold off the farm and its value if turned into cheese on the farm. No similar scheme was introduced for butter by reason of the administrative difficulties involved; farmhouse cheese-makers were few in number, each producing large quantities, but the position was very different in the case of farm butter-making.

Rate of Farmhouse Cheese Grants ⁽¹⁾.

(Pence per gallon).

	1934-35	1935-36	1936-37	1937-38	1938-39
October 1 to April 30	4 $\frac{3}{4}$	5 $\frac{1}{2}$	4 $\frac{1}{2}$	4 $\frac{1}{2}$	(a) 4 $\frac{3}{4}$
May 1 to September 30	4 $\frac{3}{4}$	4 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$	(a) 3 $\frac{3}{4}$

(¹) Rate for hard cheese; rate for Caerphilly and soft cheese 1 $\frac{1}{2}$ d. less.

(a) Rate for cheese not reaching National Mark standard is $\frac{3}{4}$ d. less.

Beginning with the year 1937-38 the Board increased its control over the market by regulating the allocation of supplies among purchasers. Previously the purchaser had been free to use his supplies as he wished and this had been detrimental to the interest of the producers in that sometimes, and particularly in the winter of 1936, the markets yielding higher returns were relatively less well supplied than markets yielding lower returns. Thus when the 1937-38 contracts were issued they were accompanied by a letter directing the producer to his market. As part of the 1938-39 contract a plan has been adopted by which the buyers are grouped in three categories, according to the degree to which their businesses are concerned with the liquid and the manufacture market respectively, and the contracts allocated so as to give priority to those serving the more profitable liquid market.

Encouragement of the consumption of liquid milk in England and Wales has been given by the Board in various ways. In 1934 it started a Milk-in-Schools scheme by which milk was supplied at less than the normal retail price, the difference being in part sustained by the Board and in part covered by the subsidy paid by the Exchequer to the Board for publicity expenses (¹). In May 1935 a publicity campaign was started which in 1936 was directed especially to increasing the consumption of milk by workers in factories. The consumption under the Milk-in-Schools Scheme is about 23,000,000 gallons a year, while the Milk-in-Industry Campaign has increased

(¹) See page 178.

consumption by workers in factories from less than a 1,000,000 gallons a year when the scheme started, to about 8,500,000 at present.

The cost of these schemes not covered by the Exchequer grant, and of the grants to farmhouse cheese makers and the bonuses paid to producers of special quality milk—to which reference will be made later—and the administrative expenses of the Board, are deducted from the receipts of the Board from the sales of milk, before these receipts are distributed among producers.

Producer-retailers also contribute to the receipts of the Board. A levy is imposed on their sales—which are to the liquid market—representing a share of the cost of operating the scheme and of the burden of the manufacturing market ⁽¹⁾.

Milk Prices and Sales in the Area of the English Milk Marketing Scheme.

	1933-34	1934-35	1935-36	1936-37	1937-38
Average of retail prices realised for liquid milk. Pence per gallon.	24.83	26.08	26.21	26.21	27.48
Average of wholesale prices paid to the Board by distributors for "liquid" milk. Pence per gallon.	14.01	15.09	15.26	15.26	16.26
Average distributors' margin. Pence per gallon	10.82	10.99	10.95	10.95	11.22
Average price realised by the Board for milk for manufacture. Pence per gallon ⁽¹⁾	4.96	4.81	4.95	5.75	6.88
Average of regional "pool" prices paid by the Board to producers. Pence per gallon	11.83	11.99	11.48	11.99	12.92
Sales for liquid consumption through the Board. Thousand gallons	523,813	552,016	555,574	579,618	618,255
Sales for manufacture through the Board. Thousand gallons	192,624	301,689	342,445	289,185	287,121
Total sales through the Board. Thousand gallons	716,437	853,705	898,019	868,803	905,376
"Liquid" sales as percentage of total . .	73.11	64.66	61.87	66.71	68.28
Milk sold by producer-retailers. Thousand gallons	109,971	113,249	108,232	^(a) 104,000	—
Milk used for farmhouse cheese. Thousand gallons	18,846	14,005	17,716	19,623	23,796

⁽¹⁾ Excluding Government subsidy

^(a) Estimated.

Scotland. — There are three marketing schemes in operation in Scotland; by far the most important is the Scottish Milk Marketing Scheme which is an organization

⁽¹⁾ Compare the position in Scotland. See p. 175.

of all producers in Scotland south of the Grampians ⁽¹⁾. Here we shall be concerned only with this larger scheme.

The scheme is operated by a Board elected by registered milk producers. All sales of milk, whether to the liquid or manufacturing market, except milk of "Certified" quality ⁽²⁾ and milk sold by producer-retailers are made through the Board which pools all the receipts and pays the producers on a per gallon basis. All milk prices are based on a yearly contract between the Board and representatives of milk purchasers. The two parties have not in the past been able to agree on the prices and terms to be fixed by the contract and the matter has therefore had to be referred to an arbitrator.

The contract prices for the year October 1938 to September 1939 were fixed on the basis of the arbitrator's recommendation. The average for the year of the wholesale prices to be paid to the Board for milk for liquid consumption, is 15 $\frac{1}{12}$ d. per gallon, a little more than $\frac{1}{3}$ d. per gallon higher than last year. The yearly average of the retail prices for milk for liquid consumption is 25 $\frac{1}{3}$ d. per gallon which is also $\frac{1}{3}$ d. per gallon higher than last year; this increase is solely in the month of October. Thus the yearly average distributors' margin which had been increased in 1937-38 by $\frac{1}{4}$ d. per gallon remains the same.

Special prices are established for "Certified" milk, which is not sold through the Board and for "Tuberculin Tested" milk, which is, since 1937, sold through the Board. The yearly average of the retail prices of "Certified" milk is 33 $\frac{1}{3}$ d. per gallon; the difference between this and the price for ordinary milk is the same as it was last year. The average of the wholesale prices to be paid to producers for this milk is 24 $\frac{7}{12}$ d., and the difference between this and the wholesale price for ordinary milk is slightly less than it was last year. "Tuberculin Tested" milk yields 4d. per gallon more to the retailer and 2 $\frac{1}{2}$ d. more to the Board than ordinary milk. ⁽³⁾

As under the English scheme, farmhouse cheesemakers in the area covered by the main Scottish scheme, receive special bonuses from the Board. Efforts are also being made here to increase milk consumption by a Milk-in-Schools Scheme, and by publicity. Part of the cost of these efforts is met out of the Government subsidy ⁽⁴⁾ and the rest represents a charge on the Board's receipts from sales.

As under the English scheme producer-retailers make contributions to the funds of the Board; and so also do producers of "Certified" Milk who do not sell through the Board. Until 1937 these contributions were on a similar basis to that in England. As a result of an action brought by a farmer which led to a court decision that the Board was not entitled to claim from these producers contributions to the burden of the manufacturing market, the basis was however changed and now the contributions represent a share of the cost of operating the scheme, and of the quality premiums ⁽⁵⁾ only ⁽⁶⁾.

⁽¹⁾ The other schemes are: Aberdeen and District Milk Marketing Scheme concerned with sales of about 9,000,000 gallons a year, and the North of Scotland Milk Marketing Scheme, with sales of a little over 2,000,000 gallon per year. The sales of the Scottish Milk Marketing Scheme are at present over 120,000,000 gallons a year.

⁽²⁾ See page 180.

⁽³⁾ See page 180 for difference in return to producer.

⁽⁴⁾ See page 178.

⁽⁵⁾ Since 1938.

⁽⁶⁾ The rate is now 1 $\frac{3}{4}$ d. per gallon.

Milk Prices and Sales in the Area of the Scottish Milk Marketing Scheme.

	1933-34 (a)	1934-35	1935-36	1936-37	1937-38	1938-39
Retail price for liquid milk ⁽¹⁾ . Pence per gallon	24.00	24.00	(b) 23.33	24.00	25.00	25.33
Wholesale prices for liquid milk ⁽¹⁾ . Pence per gallon	14.00	14.00	14.00	14.16	14.75	15.68
Average price paid by Board to producer ⁽²⁾ . Pence per gallon	10.62	10.88	10.83	11.06	11.79	—
Liquid sales through Board. Thousand gallons	40,469	53,947	55,180	57,535	60,236	—
Milk for manufacture sold through Board. Thousand gallons	24,944	35,320	41,199	37,782	38,539	—
Total sales through Board ⁽³⁾ . Thousand gallons	65,413	89,267	96,379	95,317	98,775	—
Liquid sales as percentage of total	61.87	60.37	57.26	60.18	60.98	—
Used for farmhouse cheese. Thousand gallons	9,700	9,294	8,226	7,345	6,212	—
Liquid sales by "category producers" ⁽³⁾ . Thousand gallons	16,897	16,956	17,425	17,764	17,365	—
Total of all sales. Thousand gallons ⁽⁴⁾	92,010	115,517	122,030	120,426	122,352	—

(a) December 1, 1933 (when scheme came into force) to September 30, 1934; figures for 10 months only.

(b) Retail prices fixed by contract; in this year most retailers did not observe the contracts and charged 24d. throughout the year.

⁽¹⁾ Yearly unweighted average of monthly prices fixed by the Board.

⁽²⁾ Yearly unweighted average of monthly prices paid by Board.

⁽³⁾ Producers of Certified milk and producer-retailers.

⁽⁴⁾ Total of monthly figures.

Northern Ireland. — The position in Northern Ireland is very different from that in Great Britain; whereas almost 70 per cent. of the milk produced in Great Britain is sold for liquid consumption, only about 30 per cent. of the production in Northern Ireland goes to the "liquid" market. A marketing scheme was introduced in Northern Ireland by the Milk and Milk Products Act (Northern Ireland) in June 1934. This differs fundamentally from the English and Scottish schemes. There is no producers' marketing monopoly, but instead a Joint Milk Council consisting of 3 representatives of the Ministry of Agriculture, 3 representatives of consumers appointed by the Minister of Home Affairs, 7 members elected by producers and 4 members elected by distributors. This Council fixes retail and wholesale prices for milk for liquid consumption. There is no collective marketing and pooling of receipts. Instead there is provision for

"equalisation payments" to be made to producers of milk for manufacture, in order to bring the prices realised up to a guaranteed minimum; the funds for the purpose are obtained from a levy on sales of liquid milk for liquid consumption and on sales of butter and margarine, and from any sums paid by the Exchequer of the United Kingdom to assist the milk industry in Northern Ireland. Milk for the liquid and manufacturing markets is separated on a quality basis; four grades are established and the lower grade, D, may not be sold for liquid consumption.

Wholesale prices for milk for liquid consumption for the period October 1, 1938-September 30 1938, are the same as in 1937-38. They are 1s. 3d. per gallon from October 1 to April 30, and 1s. 1d. from May 1 to September 30; these are the prices for Grades B and C, those for Grade A are 2d. higher. Retail prices which vary not only according to quality but also according to district have been increased by extending the higher winter prices for an additional three months and so shortening the summer period to the months of June and July; the highest prices, to rule in the large towns of Belfast and Londonderry and elsewhere, are:— from October 1 to May 31, 2s. 2d. per gallon for Grade A, 2s. Grade B, 1s. 10d. Grade C, and from June 1 to July 31, 2s. 1s. 10d. and 1s. 8d. respectively. The distributors margin will be about $\frac{1}{2}$ d per gallon higher in 1938-39.

The price guaranteed to producers of milk sold for manufacture — mainly to creameries — is 5d. per gallon in the summer months April to September and 6½d. in the winter months. If the milk so sold is Grade A, B or C the producer receives a bonus of 2d. per gallon from the Milk Fund.

Milk sold to Creameries for Manufacture - Northern Ireland

	1934-35	1935-36	1936-37	1937-38
Quantity. Thousand gallons	18,761	24,433	25,673	23,391
Average prices paid by creameries. Pence per gallon	3.18	3.99	4.38	5.12
Average amount of Equalisation Payments. Pence per gallon	2.15	1.35	0.90	0.35
Receipts from milk supplied to creameries:—	£	£	£	£
Paid by creameries	256,548	413,415	476,420	499,434
Equalisations payments	168,105	135,378	96,199	34,405
Quality bonus	1,501	24,256	37,235	48,230
Total	426,154	573,049	609,854	582,069

The amount of milk converted into butter on farms is estimated at about 28,000,000 gallons; thus the total quantity of milk used for manufacture of butter is between 50,000,000 and 55,000,000 gallons. Liquid consumption is estimated at about 30,000,000

gallons, and about half of this probably is consumed on farms. The contract prices fixed for liquid milk relate therefore to only a small percentage of the total milk output.

Prices fixed for Milk Liquid Consumption - Northern Ireland.

	1934-35	1935-36	1936-37	1937-38	1938-39
Average Retail prices. Pence per gallon ⁽¹⁾ ⁽²⁾	(a) 22.20	22.00	22.50	23.16	23.66
Average wholesale prices paid to producers. Pence per gallon ⁽³⁾	(a) 12.75	12.00	12.50	14.16	14.16

⁽¹⁾ Category I area — the large towns and certain urban districts; prices in Category II areas were 2d. less, in Category III areas 4d. less.

⁽²⁾ Grade B milk (into which about 60 per cent. of the milk sold for liquid consumption falls). Grade C prices were 2d. less, Grade A, 2d. more.

⁽³⁾ Grades B and C; Grade A 2d. more.

(a) For 10 months December, 16 — September 30.

Government subsidies to the milk industry.

The Milk Acts, 1934-37 provide for payments from the Exchequer to the Milk Marketing Boards in England and Wales and in Scotland and to the Government of Northern Ireland. The payments have the purposes, first, of guaranteeing to the wholesale sellers of milk minimum prices for milk for manufacture⁽¹⁾; second, of giving financial assistance to schemes for increasing the demand for milk ⁽²⁾; and third, of financing a scheme for the improvement of the quality of milk ⁽³⁾. It is to be noted that payments made to guarantee minimum prices for milk for manufacture were to be gradually repaid to the Exchequer when the prices of such milk rose above the guaranteed minimum.

⁽¹⁾ About £ 3,000,000 was paid by the Exchequer on this account during the period 1934-35 to 1937-38.

⁽²⁾ The Act provided £ 1,000,000 to be spent over two years; a further £ 500,000 was made available in each of the two years 1936-37 and an Amendment Act of 1938 provided £ 750,000 for 1938-39.

⁽³⁾ The Act provided £ 750,000 to be spent over 4 years. The relevant section of the Milk Act was repealed and replaced by a section of the Agriculture Act 1937, which provided for the payment from the Exchequer of a bonus of 1d. per gallon on milk from herds free from tuberculosis.

The provisions of these Acts expired on September 30, 1938 and as there was no prospect of the Government's proposals for a long-term measure being put into legislative effect before that date, a Milk (Extension and Amendment) Act was passed in July 1938. This extended till September 30, 1939 the provisions of existing Acts and made the following amendments to them.

First, the Milk Marketing Boards are released from all liability accruing after September 30, 1937, to repay to the Exchequer advances made in respect of milk for manufacture.

Second, the provisions of existing Acts, are enlarged to allow the development of the existing schemes for the provision of cheap milk to school children and children under school age and to expectant and nursing mothers, and for this purpose the Exchequer is to provide during the year £ 750,000, *i. e.* 50 per cent. more than the £ 500,000 hitherto made available annually.

Quality premiums.

The efforts made in recent years in the United Kingdom to encourage the improvement of the quality of the milk output, by means of various quality premiums paid by the Milk Marketing Boards and by the Exchequer, have been intensified recently.

Before the introduction of the milk marketing schemes there was in force an officially controlled system of special designations set up by the Milk (Special Designations) Order, 1923 ⁽¹⁾; this gave five grades of milk and many buyers were prepared to pay a higher price for milk of a higher grade.

New direct incentives to the improvement of the quality of milk produced were introduced in 1935. First, the Milk Marketing Board for England and Wales began to compile a roll of Accredited Producers; this is a roll of producers whose production came up to certain standards approximately the same as the Grade A standard set up in 1923 ⁽¹⁾—the cows have to be submitted to a veterinary examination at intervals of not more than six months, the milk has to comply with certain bacteriological standards, and the methods of production have to be approved by county authorities—; Accredited producers were given the right to a bonus of 1d. per gallon, paid out of the funds of the Board, on all milk they sold through the Board. Second, the Minister of Agriculture began an Attested Herds Scheme ⁽²⁾; producers whose herds showed no reactors to an official tuberculin test repeated at six-monthly intervals became entitled to a bonus of 1d. per gallon, paid by the Exchequer ⁽³⁾, on milk sold for liquid consumption. The conditions of the test and the regulations which the holders of an Attested Herd certificate have to follow are more severe than those of the Accredited scheme. The Attested Herd bonus is payable in addition to any bonus the producer might receive under the Marketing Board's Accredited Scheme ⁽⁴⁾.

(1) See the September 1938 number of this Chronicle p. 440.

(2) This scheme is in operation in England and Wales and Scotland.

(3) In accordance with the Milk Act, 1934 and later the Agriculture Act, 1937; see page 178.

(4) The output of Accredited milk was 280,024,000 gallons in 1935-36, 336,610,000 in 1936-37 and 376,585,000 in 1937-38. The output of milk in England and Wales from Attested Herds was in November 1938 2,000,000 gallons, which is times that in November 1937.

The producers of milk of the two highest grades set up by the 1923 Order, that is "Certified" and "Grade A Tuberculin Tested", were until 1937 exempt from the marketing schemes; they sold their milk independently and not through the Boards, receiving in general higher prices than those paid for lower grade milk sold through the Board. In 1937 the position was changed.

In the meantime the special designation regulations had been modified. Orders made in 1936 established three special grades for England and Wales—"Tuberculin Tested", "Accredited" and "Pasteurised"—and four grades for Scotland—"Certified", "Tuberculin Tested", "Standard" and "Pasteurised". Licences to produce "Tuberculin Tested" milk are granted to a producer on condition first, that official tests repeated at six-monthly intervals show his herd to be free from tuberculin reactors—a test similar to that required by the Attested Herds Scheme—and second, that the milk produced passes certain bacteriological tests—the form of the test in Scotland is different from that in England and Wales. The conditions for the production of Certified milk in Scotland are similar, but the bacteriological test is more severe and certified milk has to be bottled on the premises where it was produced, immediately after production and cooling, whereas T. T. milk may be transported to other premises for bottling. Herds from which Accredited milk, in England, and Standard milk in Scotland, are produced, have to be submitted to a veterinary examination—similar to that required by the Accredited Producer scheme—at intervals of 3-5 months and to be shown to be free from diseases likely to affect the milk injuriously; this examination does not include the official tuberculin test. The milk produced has to pass a bacteriological test; in Scotland the standard required for Standard milk is the same as that for T. T. milk; in England and Wales, where the test is on a different basis, the standard for Accredited milk is lower than that for T. T. milk.

Quality Premiums Paid by the Milk Marketing Board, England and Wales.

	Before October 1938		After October 1938	
	Total	Government contribution	Total	Government contribution
Accredited Milk	1	—	1 $\frac{1}{4}$	$\frac{3}{4}$
Tuberculin Tested Milk	2	—	2 $\frac{1}{4}$	1 $\frac{1}{4}$
Milk from Attested Herds	1	1	2	1 $\frac{1}{2}$
Accredited Milk for Attested Herds	2	1	3 $\frac{1}{4}$	2 $\frac{1}{4}$
Tuberculin Tested Milk from Attested Herds	3	1	3 $\frac{1}{4}$	2 $\frac{1}{4}$

In 1937 producers of T. T. milk were brought within the marketing schemes in England and Wales and in Scotland; they acquired the same benefits and liabilities as

other producers in the scheme had. They became entitled to a bonus of 2d. per gallon payable out of the funds of the Boards, on their wholesale sales, which are now made through the Board.

In the summer of 1938 the Attested Herds scheme was extended ⁽¹⁾.

Quality Premiums Paid by Scottish Milk Marketing Board.

Pence per gallon.

	Before October 1938		After October 1938	
	Total	Government contribution	Total	Government contribution
(a) Sales to or through the Board				
Standard Milk	—	—	1 1/4	3/4
Tuberculin Tested Milk	2	—	2 1/4	1 1/4
Milk from Attested Herds	1	(a) 1	2	(a) 1 1/2
Standard or Tuberculin Tested Milk from Attested Herds	3	(a) 1	3 1/4	(a) 2 1/4
(a) Sales other than to or through the Board by producers-retailers and other producer-distributors.				
Standard Milk	—	—	1	5/8
Tuberculin Tested Milk . . . . .	...	—	1 1/4	3/4
Certified Milk . . . . .	...	—	1 3/8	3/4
Milk from Attested Herds . . . . .	...	(a) 1	1	(a) 1
Standard or Tuberculin Tested Milk from Attested Herds . . . . .	...	(a) 1	2 1/4	(a) 1 3/4
Certified Milk from Attested Herds . . . . .	...	(a) 1	2 3/8	(a) 1 3/4

(a) Includes 1d provided for by the Government's Attested Herds scheme.

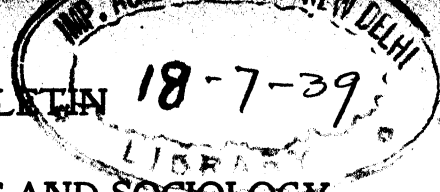
Now, for the present contract year, which began in October 1938 a new scale of quality premiums has been established. The rates payable in England and Wales have been increased, and in Scotland rates are increased and new premiums introduced.

⁽¹⁾ See the September 1938 number of this Chronicle p. 439-440.

These increased premiums are based on the Government proposals for a long-term milk act; the Government announced that if the Milk Marketing Boards decided to pay quality premiums on scales corresponding to that set out in the published proposals the Government would commend to Parliament that provision should be made in the proposed Milk Industry Bill authorising payment retrospectively to October, 1938 of Exchequer contributions towards the cost of the premiums ⁽¹⁾.

⁽¹⁾ A Milk Industry Bill was introduced at the end of 1938 but was withdrawn in face of strong opposition particularly from the English Milk Marketing Board. The Board objected to the control of the milk industry by a proposed non-representative milk commission and found that the proposed prices to be guaranteed for milk for manufacture were much too low. The Government are at present reconsidering the position.

Dott. VALENTINO DORE, *gerente responsabile*.



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No. 5

TRADE RELATIONS OF THE U. S. S. R. WITH WORLD AGRICULTURAL MARKETS

SUMMARY: — *Export trade in wheat*: — 1. Situation before the War. — 2. Exports in relation to output of wheat in Russia. — 3. Exports of wheat from Russia in relation to exports from the principal wheat exporting countries. — 4. Effects of the urbanisation of Russia on the home demand for wheat. — 5. Comparison of changes in the output of wheat and demographic changes in the principal wheat-producing countries. — 6. Export markets for Russian wheat before and since the War. — 7. Increasing self-sufficiency of the wheat importing countries. — 8. The future of Russian wheat exports. — *Export trade in flax* — *Export trade in butter*.

II. — International trade in agricultural products.

Export trade in wheat.

1. — *Situation before the War*. — Before the War, wheat played a very important part amongst Russia's agricultural exports, so that the large annual exports of this cereal combined with its excellent quality made Russia the "granary of Europe".

These exports represented as much as 14 per cent. of the total wheat output in the pre-War territories of Russia and 22 per cent. of the output of the territories within the present boundaries of Russia. However some doubts may well arise as to whether these immense exports formed a real surplus over the food requirements of the Russian people.

The following table shows the annual average wheat consumption per head in Russia compared with that in several other countries for the five-year period 1909-14.

TABLE IX. — *Consumption of Wheat in certain Countries.*
(Quintals per head).

Russia	0.89	Belgium	1.78
Romania	1.16	France	2.20
Hungary	1.19	United States	1.35
Serbia	1.25	Canada	1.41
United Kingdom	1.51	Australia	1.42
Italy	1.62	Argentina	2.28

(Appendix to the *International Wheat Situation*, issued by the Secretariat of the Wheat Advisory Committee. January 1938).

Thus the per capita consumption of wheat in Russia was substantially smaller than in overseas, as well as in European countries. The consumption of rye too, which is the staple cereal food in Russia, was lower than in many European countries where rye formed the main cereal food. The per capita consumption of rye in 1906-07 was 79.8 kg. in Russia, 143.0 kg. in Germany, 227.4 kg in Denmark, etc. In 1913-14, on the eve of the War, the corresponding figures were 120.4, 152.4 and 218.0 kg. respectively ⁽¹⁾.

Though these figures are only approximate, they are nevertheless very characteristic when considered over a number of years.

As said in Part I, a large part of the foreign loans had to be paid for with exports of cereals, which were the principal item in the balance of trade, representing 40 per cent. of total exports; for even the gold standard introduced at the end of the 19th century by Witte, the Minister of Finance, had to be protected against excessive fluctuations if it was to retain the confidence of the holders of Russian bonds. In this regard, therefore, considerations of social welfare tended to be subordinated to commercial requirements.

A comparison of present-day exports of wheat from Russia with pre-War exports is not altogether appropriate. For even before the War, in the so-called golden age of Russian wheat, exports of wheat from Russia were being affected by the pressure on the world market from overseas countries. This is clearly demonstrated in the following table, which gives the exports of wheat from the five principal exporting countries for the years from 1905 to 1913.

TABLE X. — *Exports of Wheat from the five principal Exporting Countries.* ⁽²⁾
(Thousands of quintals).

Year	Russia	Canada	United States	Australia	Argentina
1905	48,131	7,803	5,644	6,708	28,683
1906	36,036	10,379	17,106	8,236	22,480
1907	23,207	10,207	24,871	7,834	26,808
1908	14,710	14,289	25,251	4,090	36,363
1909	51,511	13,452	13,197	8,586	25,141
1910	61,360	12,635	6,602	12,999	18,836
1911	39,402	16,459	8,891	15,009	22,860
1912	26,376	23,122	16,780	8,873	26,291
1913	33,294	35,367	27,082	11,682	28,122

As is shown by these figures, in the period 1905-13 exports of wheat remained more or less constant only in Argentina, where, in fact, they even fell somewhat. Exports from Australia almost doubled, while those from Canada and the United

⁽¹⁾ International Yearbook of Agricultural Statistics, 1913-14. International Institute of Agriculture, 1915, p. 521-540.

⁽²⁾ Ibidem, pp. 252-253.

States increased fivefold. Over the same period, exports of wheat from Russia decreased year by year, except for 1909 and 1910, when harvests were exceptionally good, amounting respectively to 230,288,000 and 227,587,000 quintals, compared with 173,168,441 quintals in 1905. ⁽¹⁾

In 1905 exports from Canada had still barely reached a sixth of the Russian figure; but by 1913 they had overtaken those from Russia. Basing the index of Russian wheat exports on 1905 = 100, the index rose above 100 twice, in 1909 and 1910, when it was 107 and 127.5 respectively. In all the other years it was lower, reaching for the years 1911, 1912 and 1913 only 81.9, 54.9 and 69.2 respectively. Taking the average for the years 1909-13, however, Russia remained in absolute figures the greatest supplier of wheat in the world, though her position on the world market was being more and more contested.

2. - *Exports in relation to output of wheat in Russia* — The following table shows the quantities exported and the output of wheat in Russia during the last quarter of a century.

TABLE XI. — *Russian Exports of Wheat and Flour.*

(Thousands of quintals).

Calendar years	Output	Years (commercial season)	Exports	Percentage of exports to output
1900-1913 ⁽¹⁾ average .	206,025 (100)	1900-10 to 1913-14 average	44,689 (100)	21.69
1923-1927 " .	184,200 (89.41)	1923-24 to 1927-28 " .	4,500 (10.07)	2.40
1928-1932 " .	217,000 (105.33)	1928-29 to 1932-33 " .	10,900 (24.39)	5.02
1933-1937 " .	328,220 (159.31)	1933-34 to 1937-38 " .	6,100 (13.65)	1.85
1933	277,300	1933-34	9,400	3.39
1934	304,100	1934-35	500	0.17
1935	308,300	1935-36	7,800	2.53
1936	309,000	1936-37	1,200	0.39
1937	442,000	1937-38	11,700	2.64

⁽¹⁾ The figures for the pre-War period refer only to the territories within the present boundaries of the U. S. S. R.

⁽²⁾ International Yearbook of Agricultural Statistics, 1913 and 1914. International Institute of Agriculture, Rome, 1915, p. 23.

This table shows how completely the position has changed as regards exports of wheat from Russia since the War. Taking the pre-War average 1909-13 = 100, the index number for exports of wheat during the NEP period 1923-24 to 1927-28 (grain again being exported from 1924) sank to 10.07. During the first Five Year Plan, 1928-32, it rose to 24.39, to fall again to 13.65 in the second Five Year Plan, 1933-37. The proportion between wheat exports and output fell from 21.7 per cent. to only 1.85 per cent. in 1933-37. Compared with the pre-War period, the output of Russian wheat increased during the first and second Five Year Plans while exports were falling off considerably.

3. - *Exports of wheat from Russia in relation to exports from the principal wheat-exporting countries.* — Table XII shows the general conditions on the world market and the movement of wheat exports from the U. S. S. R. compared with those from the other more important exporting countries for the periods 1909-13, 1923-27, 1928-32 and 1933-37.

An analysis of the various sources of supply of the world wheat market and of their altered relationships over the last twenty-five years is particularly instructive. The average contribution to the world market of Russian wheat over the five years 1909-10 to 1913-14 was 24.3 per cent., almost one quarter of the total world supply. Next, though at a considerable distance, came the United States and the Danubian countries (Bulgaria, Rumania, Serbia and Hungary), each contributing about 16 per cent. Canada followed with 14 per cent.; Argentina with 12.4 per cent., while Australia supplied only 8 per cent. These countries were together responsible for about 91 per cent. of the wheat placed on the world market.

During the War Russia had only to supply her own needs, the world market remaining completely shut off. Meanwhile the overseas countries were steadily expanding their exports, and their increased importance for the world market became an established fact. This alteration in the relation between the different exporting countries underwent further change in subsequent years. Exports of wheat from the post-War U. S. S. R. territory diminished in the NEP period (1923-24 to 1927-28) to 12.08 per cent. of the pre-War level—much below that of the Danubian states whose exports fell only by two-thirds (to 32.33 per cent.) of the pre-War level. The percentage of Russian wheat exports to world exports fell to 2.5 per cent.

During the first Five Year Plan (1928-29 to 1932-33) exports of wheat from Russia more than doubled in comparison with exports in the NEP period. They still remained far below the pre-War level, however, amounting to only about a quarter of Russia's pre-War wheat exports. Russia's contribution to the world wheat market was 5.4 per cent, somewhat lower than the 6 per cent. supplied by the Danubian States. In the years 1933-34 to 1937-38 it fell to only 4.1 per cent.

Of the other countries, the United States increased her exports considerably, the export index rising to 157.57 for the period 1923-27, while her share of world wheat exports rose from 16.1 per cent. in 1909-13 to 21.9 per cent. in 1923-27. In the next two periods, however, as a result of the decline in the

TABLE XII. — *Exports of Wheat and Flour (¹) from Russia and the other principal Wheat-Exporting Countries.*
(Thousands of quintals).

Average	Total world exports of wheat	U. S. S. R.		United States		Canada		Argentina		Australia		Danubian States	
		Volume	% of world exports	Volume	% of world exports	Volume	% of world exports	Volume	% of world exports	Volume	% of world exports	Volume	% of world exports
1909-10-1913-14 . . .	181,300 (100)	44,700 (100)	24.3	20,700 (100)	10.1	25,800 (100)	14.0	22,900 (100)	12.4	14,900 (100)	8.1	30,000 (100)	16.3
1923-24-1927-28 . . .	213,300 (115.74)	5,400 (12.08)	2.5	40,800 (157.57)	21.9	79,800 (309.30)	37.4	38,000 (168.56)	18.1	24,000 (165.10)	11.5	9,700 (32.33)	4.5
1928-29-1932-33 . . .	207,600 (112.64)	11,200 (25.05)	5.4	29,900 (99.66)	14.3	72,000 (279.07)	34.7	41,800 (182.53)	20.1	33,800 (226.84)	16.3	12,400 (41.33)	6.9
1933-34-1937-38 . . .	147,500 (80.03)	6,100 (13.05)	4.1	7,900 (26.60)	5.4	48,000 (180.53)	33.2	34,300 (149.78)	23.3	27,900 (187.25)	18.9	12,100 (40.33)	8.2

(¹) Flour reduced to grain on the basis of the coefficient: 1 quintal of flour = 1.33333 quintals of grain. International Yearbook of Agricultural Statistics.

output of wheat, the export index fell just below 100 and subsequently to only 26.6, whilst at the same time the U. S. A. share in world exports fell to 14.3 per cent. and then to 5.4 per cent., thus sinking to nearly as low a level as exports of Russian wheat during the same period.

Exports from Argentina showed increases in both the first two periods considered here, export indices being 168.56 and 182.53 respectively; in the last five years, however, the index number fell below 150. Meanwhile her share in world exports rose continually, from 12.4 per cent. in 1909-13 to 18.1 in 1923-28 to 20.1 in 1928-32 and to 23.3, or nearly a quarter of the world trade in 1933-37.

Australia shows the second largest increase with an export index of 165.10 in the first, 226.84 in the second and 187.25 in the third post-War period, the percentage share in world trade being respectively 11.5, 16.3 and 18.9 for the same periods.

Canada's export index rose above 309 for the years 1923-24 to 1927-28 and shows the largest increase; but after the crop failures of 1929 and 1931 and in 1936 and 1937 especially, the index fell to 279.07 and 189.53. Nevertheless Canada still remained the largest exporter of wheat, its share in world exports rising from 14 per cent. before the War to 37.4 per cent and falling to 33.2 per cent. in the last period. Thus Canada, which before the War had been the fourth largest exporter of wheat, coming after Russia, the Danubian states and the United States, now rose to first place on the world wheat market, previously held, as has been shown, by Russia, who after the War fell to the sixth and last place among the great wheat-exporting countries.

Thus after the War exports of wheat from Russia to the world market were intermittent and had to compete with the greatly increased surpluses of the other exporting countries. They were therefore unable seriously to influence the altered structure of the world wheat market.

4. - *Effect of the urbanization of Russia on the home demand for wheat.* — These changes in wheat exports reflect the present tendency towards stagnation in the international trade in wheat. Nevertheless, the fundamental causes of the decline in Russian exports are to be found in the economic conditions of Russia herself. The output of wheat, though it rose after 1925, lagged behind in comparison with the rate of increase of the urban population. For the number of town dwellers was increasing fairly rapidly, and the industrial and office workers, etc. had to rely mainly on the State for their supplies of food.

In 1937 34.7 per cent. of the total population of the U. S. S. R. consisted of workers and employers, 55.5 per cent. of *kolkhoz* peasants and cooperative artisans, 5.6 of non-collective peasants and non-cooperative artisans, and 4.2 per cent. of students, soldiers, invalids and old-age pensioners etc. The changes in occupation resulting from alterations in the economic structure of the country were so great that the urban population rose from 25 million in 1913 to about 60 million in 1937. Thus the number of town-dwellers has more than doubled.

Under the new régime private enterprise was eliminated and every variety of economic activity increasingly concentrated in the hands of the State. The Central Government was therefore obliged, if the effectiveness of the general

economic plan was to be ensured, to try to eliminate as far as possible any disharmony between production and consumption of the various goods. The responsibility for the food supplies of the people lies on the planning committees, so that exports can not easily proceed unregulated. Before the War wheat exporting came within the scope of private enterprise, the rôle of the State being only indirect, but since then the conception of the rights and obligations of the State has changed radically.

5. — *Comparison of changes in the output of wheat and demographic changes in the principal wheat-producing countries.* — A comparison between the outputs of wheat of the chief producing countries shows that Russia's production has been larger absolutely than that of any other country both before and since the Revolution. The only exception to this was during the NEP period and the first Five Year Plan, when the average output of the United States was greater than that of the U. S. S. R. In general, Russia remains to-day, as it was before the War, the world's greatest producer of wheat. It must of course be remembered that her population in 1935 was about 168 million, whereas the populations of the United States, Argentina, Canada and Australia were respectively 127.2 million, 12.4 million, 10.9 million and 6.8 million — amounting in all to 157.3 million.

In the last 25 years the shares of the chief wheat-producing countries in the world output of wheat have undergone great changes. This is shown in Table XIII, which gives both relative and absolute figures for the pre-War and NEP periods and for the two Five Year Plans (1928-32 and 1933-37).

These figures show the changes that occurred in world wheat production and also in the output of each of the five most important producing countries in comparison with the world production of wheat. On the basis 1909-13 = 100 we find that the index for the volume of world production in 1928-32 had risen above 120, an increase of over a fifth.

Russian production has also increased, though more slowly than world production. The index number rose to 105.34 during the first Five Year Plan, an increase which was 14.46 per cent. less than the world increase.

During the same period the index number for wheat production in the United States rose to 125.29, thus exceeding the index number for the world output by 5 per cent.

The wheat indices for other countries also show big changes. Canada's output of wheat more than doubled in the twenty year period under consideration, the index for 1928-32 standing at 208.77, which is considerably higher than the world index. Argentina's output also increased very greatly, the index for 1928-32 having risen to 164. Finally, in the same period Australia's wheat index rose to 200, a doubling of her output.

Corresponding to the varying degrees of increase in wheat production in these countries, their shares in world output also changed somewhat. Russia's share fell about 2.4 per cent. below the pre-War figure. In the same period the United States share rose from 17.75 to 18.56, per cent., Canada's from 5.1 to 8.8, Argentina's from 3.78 to 5.18 and Australia's from 2.33 to 3.88.

TABLE XIII. — *Wheat Production in Russia and in the principal Wheat-producing Countries.*
(Thousands of quintals)

Years (average)	World wheat production	Russia / U. S. S. R.		United States		Canada		Argentina		Australia	
		Volume	% of world total	Volume	% of world total	Volume	% of world total	Volume	% of world total	Volume	% of world total
1909-13	1,058,000 (100)	206,000 (100)	19.47	187,800 (100)	17.75	53,600 (100)	5.07	40,000 (100)	3.78	24,600 (100)	2.33
1923-27	1,131,600 (106.95)	184,200 (89.42)	16.28	216,500 (115.28)	19.13	109,900 (205.04)	9.71	62,200 (155.50)	5.50	37,200 (151.22)	3.29
1928-32	1,267,500 (119.80)	217,000 (105.34)	17.12	235,300 (125.29)	18.56	111,900 (208.77)	8.83	65,600 (164.00)	5.18	49,200 (200.00)	3.88
1933-37	1,318,320 (124.60)	328,220 (159.33)	24.90	174,600 (92.97)	13.24	67,400 (125.00)	5.11	60,000 (150.00)	4.55	43,200 (175.61)	3.28

These fluctuations in the output of wheat between the years 1909-13 and 1928-32 are of special interest, because they show how the trends of population and of the output of wheat in these countries have diverged from one another.

In contrast to the countries showing the largest increases in their output of wheat, the U. S. S. R., whose share in world production fell from 19.5 to 17.1 per cent. between the two periods in question, has a very high coefficient of increase of population. According to Dr. R. R. Kuczynski the net reproduction rate, which is the most exact method of expressing the balance of births and deaths, is "enormous and hardly lower than it ever was, since mortality probably has decreased about as much as fertility". Together with Japan, the U. S. S. R. with a net reproduction rate of 1.4 shows the highest coefficient of increase of population of any country. In the United States and Argentina the net reproduction rate lies between 0.8 and 1.0, in Canada between 1.2 and 1.4 ⁽¹⁾ whilst in Australia it is 0.96 ⁽²⁾. Thus despite the fact that these countries tend to augment their populations by immigration from abroad, their net reproduction rates are below that of the U. S. S. R.

Though such comparisons cannot be made with absolute precision they do show the general trend, which is of the utmost significance for our present argument.

This marked tendency of wheat production in the principal wheat-exporting countries to increase relatively to the trend of population was not apparent during the period of the second Five Year Plan. This was due to the United States wheat output in the four year period 1933-36 having been exceptionally low on account of the unusually unfavourable natural conditions. Not only was it lower than the average American output for the five years 1923-27, but it was also below the 1909-13 figure, being only 93 per cent. of the pre-War volume of production. This abnormal fall in the United States output of wheat led to a substantial reduction in exports during 1933 and 1934, and in 1935 and 1936 even caused the United States to import 16.6 million quintals of wheat—a phenomenon the like of which has not occurred throughout the recent history of the country.

As a result of drought Canadian harvests throughout these five years were also very seriously affected. Thus the largest crop in the five years 1933-37, that of 1933, was only 76 million quintals. This is lower than the smallest crop for the five years 1928-32, which occurred in 1929 and amounted to 83 million quintals. The index number for wheat output fell from 208.77 in the first five years to 125 in the second period.

At the same time, however, in Russia natural conditions combined with the improvements in the utilisation of labour so as almost to make certain for each year of the second Five Year Plan, (1933-37) of harvests which were

⁽¹⁾ *The Population Problem* by T. H. MARSHALL, Prof. A. M. CARR-SAUNDERS, H. D. HENDERSON, R. R. KUCZYNSKI, Professor ARNOLD PLANT. London, 1938, p. 113-115.

⁽²⁾ *Population and Social Problems. International Labour Review*, I. L. O. Geneva, March 1939, p. 302.

exceptionally good—much larger indeed than previously, either before or after the War. Russia's share in the world output of wheat in 1933-37 was therefore very high, 25.5 per cent., and the production index jumped to 159.3. But although these changes in wheat production in the years 1933-37 are very important in themselves, they scarcely affect the general picture of the trend of world wheat production in the principal producing countries since the War, considered from the point of view of demographic changes.

The low net reproduction rate, and the large harvests of wheat in the most important overseas producing countries which accompanied it, are amongst the characteristic tendencies of the War and post-War years, which are reflected by the altered importance of various countries for the world wheat market. The margin between the volume of exports and internal requirements in these countries is much broader than in the Soviet Union, so that a decrease only effects them indirectly, through the balance of trade.

In the U. S. S. R. on the other hand the rate of increase of wheat production has been lower and the net reproduction rate higher than in the overseas countries. In contrast to the other countries, therefore, the problem of increasing the output of wheat is not primarily one of commercial policy and the need to export, but, for the immediate future at least, mainly a matter of securing an adequate food supply to the population at home—especially when it is recalled that the per capita consumption of wheat in the U. S. S. R. has risen from 0.89 quintals for the five year average 1909-14 to 1.11 quintals for the five year average 1932-37.

During the same period the per capita consumption of wheat in the overseas countries has, for various reasons, fallen off, in Argentina from 2.80 to 2.10 quintals, in Australia from 1.42 to 1.33 quintals, in Canada from 1.41 to 1.09 quintals, and in the United States from 1.35 to 0.99 quintals.

The total quantity of wheat used in Russia for human nourishment increased from 119 million quintals for the average of the years 1909-14 to 189 million quintals for the average of the years 1932-37—a rise of almost 60 per cent. (1).

This probably also accounts for the Soviet Union's not undertaking any engagement with the London International Wheat Agreement of 1933 to restrict her production of wheat.

From 1909-13 to 1932-36 the population of Russia increased from an average of 134 million to 169.3 million, giving an index for the latter period (1909-13 = 100) of 126.41. If, therefore, we allow for this increase in population and take as normal the pre-War proportion of exports to output of 22 per cent. (actually it was 21.69 per cent.), then theoretically, with a total output of 328 million quintals, exports for the average of the years 1933-37 should have been 52.8 million quintals or 17.2 per cent. (2) of output, as against the actual figure of 1.85 per cent.

(1) Appendix to the *International Wheat Situation*, issued by the Secretariat of the Wheat Advisory Committee, January 1938.

(2)
$$\frac{44.7 \times 100 \times 328}{206 \times 126.4} = 52.8 \text{ million quintals, or } 17.2 \text{ per cent. of the output of wheat (328 million quintals).}$$

Russia could have gained entry to the world market by price cutting as she did in 1930, when she endeavoured, in order to obtain exchange for payment for the necessary imports of machinery, to market wheat from the abundant crop of that year at low prices. What was then an economic necessity, however, would have been during the second Plan, 1933-37, a luxury and indeed an economic absurdity. For not only had her demand for industrial goods from abroad fallen off, but wheat prices were chronically bad, being not only below the pre-War level, but below the average price for 1928-32 too. Thus for the U. S. S. R. price dumping is a two-edged weapon and its effect most problematical.

Russian exports of wheat, which at first sight appear to involve only a special problem, are thus seen to be of general interest, and to lead to important questions of principle relating to world economic organization.

6. — *Export markets for Russian wheat before and since the War.* — Table XIV. shows the principal markets to which Russian wheat was exported before the War, giving relative figures for the quantities exported for each year from 1905, until the War ⁽¹⁾.

As can be seen from the table, before the War Holland, Italy and the United Kingdom were the largest importers of wheat from Russia. Holland took almost a fifth, and sometimes more, of the Russian output, but a considerable part of this only entered Holland in transit awaiting re-export. In Italy Russia's hard wheat was very popular, especially for the production of macaroni, and had gained great renown, so that in 1905 Italy took over a fifth of total Russian exports of wheat and in 1913 this percentage rose to almost a third. Together, Italy and Holland imported over a half (52.5 per cent.) of Russian exports of wheat.

The United Kingdom came third, taking a quarter of the exports in 1905, though this figure had fallen to a tenth in 1913, her imports from Canada, the United States and Australia having substantially increased during this period. France held fourth place, importing respectively 9.4 and 15 per cent. of the Russian exports in these two years. Imports of Russian wheat into Germany before the War remained for the most part fairly stable, amounting to 6.15 per cent. in 1905 and 5.8 per cent. in 1913. After this came the less important markets of Spain, Greece, Belgium, Sweden, etc.

In recent years the destination of Russian exports has undergone a very considerable change, as Table XV shows. The most important market for Russian wheat is now the United Kingdom, which took more than a third (35 per cent.) in 1930 and more than a half (52.4 per cent.) in 1935 of all Russian exports of wheat. Italy was until recently one of the most important markets and in this period came second only to the United Kingdom. In 1930 she took 14 per cent. and in 1934 15.4 per cent. of the Russian wheat exports. In 1935 and 1936, however, the wheat trade between these two countries fell off almost completely. In the meantime the Greek market had greatly increased its importance,

(1) From the International Yearbook of Agricultural Statistics, 1915, p. 194.

TABLE XIV. — Exports of Russian Wheat before the War.

(Per cent.)

[illegible]

imports rising from 2.3 in 1930 to 51.5 per cent. in 1936. In 1930 Germany imported 14.3 per cent., almost as much as Italy, and in 1934 the figure rose to 15.8 per cent. In 1935 however imports fell to 0.02 per cent., and were reduced practically to zero in 1936.

Belgium, on the other hand, has greatly increased her importance as a market for Russian wheat, taking 15.6 per cent. in 1936. The Netherlands also imported the very considerable quantity of 6.5 per cent. in 1935. Certain new markets for Russian wheat have also made their appearance, such as Norway, Finland, Estonia, etc.

France has lost much of the importance she had before the War as an importer of Russian wheat and, incidentally, not of Russian wheat alone. In 1935 she took only 1 per cent. of the total exports of wheat from Russia. French imports of wheat fell from an average of 12.8 million quintals in 1928-29 to 1932-33 to only 1.7 million quintals from 1933-34 to 1937-38. Indeed, in 1934, after a series of good harvests, France herself exported some 4.8 million quintals.

Thus not only has the volume of Russian exports of wheat greatly altered in comparison with the pre-War period, but the importing countries themselves have altered their importance as importers of wheat.

7. - *Increasing self-sufficiency of the wheat-importing countries.* — The position of Russian, as of world exports of wheat in general, has been greatly affected by the policies of those countries which formerly took their additional wheat requirements from the world market, but which now attempt as far as possible to satisfy their needs by expanding home production.

According to investigations by the International Institute of Agriculture, the following are the declines in the percentages of wheat imported to total supplies of wheat in the consuming countries:— In the United Kingdom and Ireland from 80.3 per cent. for the average of the years 1923-24 to 1927-28, to 76.4 per cent. for 1933-34 to 1937-38; for the same years in France from 14.4 per cent. to 2 per cent; in Italy from 27.5 per cent. in 1923-24 to 1927-28 to 6.3 in the second period given; for Germany and Austria from 42.4 per cent. to 11.3 per cent. for the same period; and in the Netherlands, from 84.3 to 59.0 per cent. for the same period ⁽¹⁾.

By increasing their own output, the importing countries made themselves more and more self-sufficient; foreign wheat was admitted only in greatly reduced quantities as a result of far-reaching measures of restriction such as high tariffs, import quotas for foreign wheat, subsidies to encourage the milling of domestic grain, etc.

Other factors, such as the trade and tariff policies of many of the exporting countries, monetary problems, etc. have also had their effect.

Since the War, each country, instead of letting its economic organization assume the form most adapted to its natural and technical conditions and its geographical position, in accordance with the rational principles of the internat-

⁽¹⁾ The World Wheat Situation in 1938-39. Rome, 1939, p. 38.

TABLE XV. — *Exports of Wheat*
(Metric tons and

Country of destination	1930		1931		1932	
United Kingdom	887,134	35.05	1,768,273	70.76	220,056	39.94
Belgium	44,484	1.76	4,748	0.19	10,575	1.92
Germany	362,305	14.32	79,245	3.17	3,725	0.68
Netherlands	32,084	1.27	47,640	1.91	52,363	9.50
Greece	58,545	2.31	107,180	4.29	139,663	25.35
Denmark	17,549	0.70	17,794	0.71	—	—
Italy	353,465	13.97	194,582	7.79	73,416	13.33
Spain	—	—	—	—	—	—
Norway	12,680	0.50	9,157	0.37	4,160	0.75
France	65,764	2.60	2,894	0.11	8,615	1.56
Finland	—	—	3,985	0.16	3,356	0.61
Other countries	(2) 696,925	27.48	(3) 263,460	10.54	(4) 34,988	6.36
<i>Total . . .</i>	2,530,935	100	2,498,958	100	550,917	100

(1) Information regarding the wheat exports of these countries in 1937 has not been issued to date. —

(3) Including 153,182 metric tons to other British Possessions. — (4) Including 14,117 metric tons to Rumania

ional division of labour, has been preparing itself for exceptional times of crisis. Increasing numbers of "Isolated States" have appeared, uniform in their economic life and showing less and less cohesion between one another.

Between countries regulated in this way and to roughly the same extent, trade, and not less the wheat trade becomes much more difficult.

8. — *The future of Russian wheat exports.* — There can of course be no precise estimate as to what the future of Russian exports of wheat will be. Of one thing, however, there can be no doubt. The requisite agrarian and economic conditions for a further expansion of wheat production in the U. S. S. R. are largely in being. Although the area under wheat is now greater by a third than the pre-War area there remain large tracts of land which have not yet been brought under the plough. At present wheat production is extending from the areas of surplus output towards the north and east where its production is inadequate for the requirements of the areas. In future, therefore, these areas, which include the Volga area, South-West Siberia, the Omsk region and the Far-Eastern territories of the U. S. S. R. will be able to cover their needs with their own

from the U. S. S. R. in 1930-36.

per cent.) (%).

1933		1934		1935		1936	
371,984	49.71	38,101	17.99	376,572	52.35	—	—
88,650	11.85	12,934	6.11	115,179	16.01	9,045	15.61
19,900	2.66	33,501	15.82	175	0.02	—	—
69,599	9.30	7,222	3.41	46,648	6.48	—	—
97,187	12.99	24,280	11.47	114,992	15.98	29,815	51.46
1,133	0.15	3,230	1.53	—	—	—	—
45,900	6.13	32,690	15.44	—	—	—	—
—	—	—	—	—	—	10,162	17.54
15,770	2.11	37,247	17.59	25,503	3.55	5,497	9.49
2,539	0.34	10,265	4.85	7,553	1.05	—	—
6,772	0.91	2,627	1.24	1,435	0.20	1,016	1.75
28,814	3.85	9,669	4.56	31,293	4.35	2,400	4.15
748,248	100	211,766	100	719,350	100	57,935	100

Including 425,411 metric tons to Gibraltar and 208,864 metric tons to other British Possessions. —

output. Nevertheless, compared with the pre-War position the percentage area under wheat, and cereals in general, has fallen relatively; for the area under industrial crops such as cotton, sugarbeet, flax, etc., has been greatly extended.

There is also still room for a large increase in the yield of wheat per hectare, although in this respect there has been some improvement in recent years. The average yield for the years 1909-13 was 6.9 quintals per hectare, while by 1926-30 the figure had risen to 7.5, and in the year 1937 to 10.7 quintals per hectare. This figure is still, however, much below the yield per hectare obtained by the intensive agriculture of the importing countries. In 1937 Denmark, for example, harvested 28.5 quintals per hectare, Holland 27.3, Belgium 24.6, the United Kingdom 20.6, Switzerland 23.3, etc. In the overseas wheat producing countries too, the yield is somewhat greater than in Russia.

Much is being done in the U. S. S. R. to increase the yield of wheat; by a more efficient use of labour, by more extensive application of fertilizers, by measures against drought, especially in the trans-Volgan wheat area, by the improvement of the seed, and also by employing Lyssenko's method of vernalization for the pre-treatment of seed (*yarovizatsia*). By this method grain cereals are

made less dependent upon climatic conditions by speeding up the process of ripening. As a result, wheat can be successfully grown in northern parts.

The expansion of production, however, is only one aspect of the problem of the future of wheat exports. Other factors which must be considered are: the rate of increase of population in the U. S. S. R., the development of the internal market, and last but not least, the position of the international wheat market in the immediate future. At present these are all imponderables, which though referred to here are not open to scientific analysis.

Export trade in flax.

The U. S. S. R. is also the largest producer of flax; indeed its importance as a producer of flax is much greater than as a producer of wheat.

Both climatic and soil conditions in the U. S. S. R. are suitable for the cultivation of flax. The most important areas for its cultivation are the Kalinin district, the Western Region, the districts of Yaroslav, Leningrad and Kirov, and the White Russian Republic. Together these areas account for about 75 per cent. of the fibre produced in the U. S. S. R.

In contrast to cotton, for example, the flax fibre must undergo a long and costly process for manufacture into yarn, for it must first be obtained from the stalk. A large supply of labour is therefore required, but the U. S. S. R. is favoured in this too, as there is no lack of labour.

The area under the long staple flax *Dolggunetz*, which is grown mainly for its fibre, as contrasted with the *Coudrjache* which is cultivated almost exclusively for the seed, rose from 1,295,000 hectares before the War ⁽¹⁾ to 2,510,000 hectares in 1932. In the last few years, however, the area under flax fell, amounting to 2,067,000 hectares in 1937 against a total area for the world in this year of 3,361,400 hectares.

In the last few years the average percentage share of land under flax in the total cultivated area of the U. S. S. R. was about 2 per cent.

As Table XVI shows, Russia's output of flax has experienced a large increase over the average of 3.3 million quintals for the years 1926-30, which represented about 59 per cent. of the world output; in 1938 5,500,000 quintals were produced, amounting to 75.03 per cent. of the world output.

After the U. S. S. R. come, though of very much less importance, Poland, Germany, Lithuania, Latvia, Belgium, France, the Netherlands, Czechoslovakia, Yugoslavia etc. All these countries together, however, only contributed a third of the total European output in 1937.

This shows Russia's importance as a flax producer for the European flax industry. Indeed, the U. S. S. R. has practically a monopoly of the flax market.

Flax is the fifth textile in importance on the world market, with a share in 1936 of 6.3 per cent. of all textiles, far below cotton with 53.7 per cent. Next in order of importance come wool (14.5 per cent.), jute (13.5 per cent.) and

(1) In the area corresponding to the present territories of the U. S. S. R.

TABLE XVI. — *Russian Output of Flax.*

(Thousands of quintals).

Year	Russian output	World output	Percentage of Russian to world output
Average 1909-13	(¹) 5,130	7,390	69.42
„ 1926-30	3,260	5,500	58.63
1931	5,533	6,900	80.19
1932	4,981	5,990	83.15
1933	5,480	6,700	81.79
1934	5,328	6,890	77.33
1935	5,512	7,650	72.05
1936	5,300	7,670	69.10
1937	5,080	7,530	67.46
1938	5,500	(²) 7,330	(²) 75.03

(¹) 3.3 million quintals in the territories at present constituting the U.S.S.R. — (²) Provisional figures.

hemp (6.9 per cent.). After flax in importance come rayon (3.9 per cent.), staple fibre (1.1 per cent.) and silk (0.3 per cent.).

It is interesting to note here that the agricultural product which first linked Russia with foreign markets was not cereals but flax. Exports of flax can be traced back to the year 1686, at the beginning of the reign of Peter the Great. In 1800 262 quintals were exported. By 1898 the figure had risen to 2.3 million quintals, by 1912 to 3.5 million quintals.

TABLE XVII. — *Russian Exports of Flax* (¹).

(quintals and per cent.)

Year	Russian exports	Total Russian output	Percentage of total output exported	World exports	Percentage of Russian to world exports
Average 1909-13	2,821,106	5,130,000	54.99	3,855,000	73.18
„ 1926-30	631,800	3,260,000	19.38	3,221,300	19.61
1931	796,400	5,533,000	14.39	2,231,100	35.70
1932	824,400	4,981,000	16.55	2,383,300	34.59
1933	880,200	5,480,000	16.06	2,116,600	41.59
1934	913,000	5,328,000	17.14	2,593,900	36.46
1935	590,600	5,512,000	10.71	2,746,000	21.51
1936	571,000	5,300,000	10.77	3,130,000	18.24
1937	344,800	5,080,000	6.79	—	—

(¹) International Yearbook of Agricultural Statistics, 1937, 1938.

As Table XVII shows, exports of long staple flax in absolute figures increased constantly from the end of the War to 1934, when they amounted to 913,000 quintals representing 17.1 per cent of the total Russian output and 36.4 per cent.

of world exports. Since 1934 exports have fallen off both relatively and absolutely. Thus average exports for the years 1926-30 were 19.4 per cent., or almost a fifth, of the U. S. S. R. output, while in 1937 they were only 6.8 per cent. or about a fifteenth. Further, before the War Russia's exports of flax amounted to almost three-quarters of world exports, while by 1936 this figure had fallen to 18.24 per cent., or somewhat less than a fifth.

In post-War years exports of flax from the U. S. S. R. have shown the same tendency as exports of wheat. Home production rose during the first and second Five Year Plans compared with that of the NEP period, and in some years even passed the pre-War figures, which related to the territories of the Russian Empire; but at the same time the percentage share of Russian exports relative to output has greatly declined.

This is due, as in the case of wheat exports, to the large increases in the employment of flax for the home industry. In 1937 the factory output of linen yarn reached 96,000 metric tons, compared with 39,500 metric tons in 1913 and 54,000 metric tons in 1932. In the same period the output of linen cloth rose from 119 million square metres in 1932 to 300 million square metres in 1937 ⁽¹⁾.

As a result of the large quantities of flax retained in the U. S. S. R. for home consumption, prices on the world market rose; for, as said before, Russian exports of flax have a decisive influence on world prices. Thus average prices per metric ton of Belgian and Latvian flax, c. i. f. in London in the years 1929-37 were as follows:—

TABLE XVIII. — *Average annual Prices of Belgian and Latvian Flax.*
(Gold francs per quintal)

Year	Belgian water-retted	Livonian Z. K.
1929	336.12	187.05
1930	267.61	127.24
1931	243.72	80.83
1932	202.08	80.74
1933	172.91	86.71
1934	160.83	92.66
1935	159.81	117.07
1936	174.33	94.01
1937	193.40	117.87
1938	175.10	102.51

As a result of its superior quality the prices of Belgian water-retted flax are generally fairly high. In 1932, at the worst period of the depression and in the three following years, prices of both these types of flax fell to half their 1929 level. Since then a considerable rise in world prices has taken place, although in 1938

⁽¹⁾ *Le Journal de Moscou*, September 6, 1938.

they again fell some what. Compared with the prices of other textile fibres, prices of flax have remained fairly stable.

The reduction in the supply of Russian flax to the world market led to many countries expanding their own output of flax. Germany has shown the largest increase with a rise in the output of flax fibre from 31,000 quintals in 1933 to 339,000 quintals in 1937, thus expanding production more than tenfold in five years. Germany, like many other countries, such as Romania and Ireland, guaranteed fixed prices to flax producers. These prices are higher than those ruling on the world market, and the State grants bonuses to producers for increasing their output.

The output of flax in Belgium has also risen considerably, from 78,000 quintals in 1933 to 238,000 quintals in 1937. In France output rose from 92,000 quintals in 1933 to 243,000 quintals in 1936, but fell in 1937 to 190,000 quintals as a result of the reduction in the area under this crop. Production has also substantially increased in Italy and Poland.

The countries coming next to the U. S. S. R. as exporters of flax, though very much less important, are Belgium, Poland, Lithuania, the Netherlands, Latvia and Estonia. France and the Netherlands also export large quantities of flax straw to Belgium, where it is retted in the lower reaches of the river Lys and then worked up by the factories in the district of Courtrai.

In 1936 Russian exports of flax were distributed mainly between the following countries (in thousands of metric tons and in per cent.) ⁽¹⁾:

	1000 metric tons	per cent.
United Kingdom	24.4	43
France	16.6	30
Belgium	9.9	18
Czechoslovakia	2.4	4
Germany	1.5	3
United States	0.8	1
Sweden	0.5	1
Other countries	0.1	—
Total	56.2 (*)	100

(*) This figure differs somewhat from that on p. 199.

The United Kingdom is the most important market for Russian flax, taking more than two-fifths of the total Russian exports. Next comes France with about a third and Belgium with about a fifth. These three countries together import more than 90 per cent. of the total exports of flax from the U. S. S. R. Czechoslovakia took 4 per cent., Germany 3 per cent., the United States and Sweden coming last each with 1 per cent.

The United Kingdom was the most important market before the War too, importing in 1912 for example 948,265 quintals, or almost a third of the total of 3,163,558 quintals exported. The British market has now become still more important.

(1) *Industrial Fibres*, Imperial Economic Committee. London 1938, p. 73.

In 1912 Germany took second place with a total importation of 816,730 quintals. Belgium came third with 722,870 quintals, then France with 367,250 quintals and Austria-Hungary fifth with 244,069 quintals.

France and Germany have therefore been the foreign markets which have most changed in importance in comparison with the pre-War period. Germany's position before the War as the largest importer of Russian flax has now been taken by France, who has risen from fourth place before the War to second now. At the same time Germany has fallen from second to fifth place.

Manufactured or semi-manufactured goods are now exported in large quantities from the U. S. S. R. In 1937 about 93,000 quintals of the total flax exports were exported in this form. The United States, which is the largest cotton exporting country in the world, is also the largest purchaser of linen goods, taking about 90 per cent. of total Russian exports. About 6 per cent. of the exports of the finished goods go to Sweden and Norway, about 2 per cent. to Iran, and smaller quantities to the United Kingdom and Lithuania.

Export trade in butter.

Unlike exports of wheat and linen, the export trade in butter is a relatively new phenomenon. The exportation of Siberian butter in large quantities, whether abroad or to European Russia, began with the opening of the Trans-Siberian railway at the end of the last century. In 1894 65.5 quintals were exported, but by 1900 exports had already reached 163,800 quintals, whilst in 1913 exports were 790,000 quintals, amounting to 55 per cent. of the total production in Russia with a value of 71,558,000 gold roubles.

Of all Russian exports, butter came fourth in order of importance, being preceded only by wheat, barley and flax.

Before the War about a tenth of all butter exported from Siberia went to European Russia, the remaining 90 per cent. being sent abroad. Of the importing markets, the United Kingdom came first taking 48 per cent. of total Russian exports of butter, whilst Germany came second with 35 per cent. Denmark took 12 per cent., the remaining 5 per cent. being distributed between various other countries.

The War at first greatly reduced, and then completely paralysed butter exports. Only in 1923 were butter exports recommenced, this time through State and collective organizations. In this year about 40,950 quintals were exported to the United Kingdom and about 13,000 quintals to Germany. In 1924 exports to Germany rose steeply.

The butter for export is mainly supplied by the R. S. F. S. R., 88 per cent. of the total Soviet exports coming from this source. Within this Republic West Siberia supplies 41.6 per cent. of the total exports of butter from the U. S. S. R., the Northern territory 9.4 per cent. and Kasakstan 4.6 per cent. These areas are all rich in pasture and meadow land, and in them stockraising has for centuries been the leading form of agriculture.

The following table shows exports of butter from the U. S. S. R. in the last nine years compared with world exports of butter.

TABLE XIX. — *Exports of Butter from the U. S. S. R.*
(Metric tons)

Year	U. S. S. R. exports	Total exports of the most important exporting countries	Per cent.
1929	25,400	504,053	5.04
1930	10,522	529,631	1.99
1931	30,855	569,803	5.41
1932	30,934	544,439	5.68
1933	37,205	555,549	6.70
1934	37,903	588,417	6.44
1935	29,097	596,020	4.88
1936	23,177	595,641	3.89
1937	14,662	590,948	2.48

Although the U. S. S. R. (1) is the second largest producer of butter in the world, coming next to the United States, exports of butter have fallen both absolutely and relatively in comparison with world exports; in 1929 and 1933 the share in world exports was respectively 5.0 and 6.7 per cent., while in 1937 this figure had fallen to 2.5 per cent.

Compared with the volume of butter exported from the chief exporting countries of the world such as Denmark, who exported 152,911 metric tons in 1937, or such overseas countries as New Zealand and Australia, who come second and third respectively as world exporters of butter, Russian exports take a very modest place. As an exporter in Europe, the U. S. S. R. has taken either second place as was the case from 1932 to 1934, coming immediately after Denmark, though at a very considerable distance, or she has taken seventh place, as in 1937, coming after Denmark, the Netherlands, Ireland, Sweden, Latvia and Lithuania.

The percentage proportion of Russia's exports to her production of butter fell from 42.9 per cent. in 1932 to 12.4 per cent. in 1936.

The decrease in the cattle population from 1930 to 1934 as a result of the overthrow of the *Kolkhoz* movement was partly responsible for the reduced output of butter. In part, however, it was also due to increased consumption of butter within the Soviet Union.

In 1911 the per capita consumption of butter in Russia was $\frac{1}{2}$ kg. and this figure fell to $\frac{1}{7}$ in 1922, compared, for example, with a consumption of butter in the United Kingdom in 1913 of 8 kg. and in 1923 of 9 kg. per head; in France of 5 and 6 kg. respectively; in Germany of 5 and 4 kg. respectively; in the United States of 4 and 6 kg. respectively; and in Sweden of 6 and 8.5 kg. respectively.

By 1931 the per capita consumption of butter in the U. S. S. R. had risen to 3.5 kg. per head, while in 1935 the figure was 5 kg, or not much less, for example,

(1) There are no official statistics of the total U. S. S. R. output of butter.

than in France, where in the same year the figure was 5.7 kg, or in Sweden, where it was 5.9 kg.

The United Kingdom continued to be the principal export market for Russian butter after the War, taking 80 per cent. of the total exports of Russian butter in recent years. The United Kingdom is indeed by far the largest importer of butter in the world, and in 1937 took four-fifths of the total world imports. From Russia the United Kingdom imported 8,405 metric tons in 1930, the figure rising to 28,587 metric tons in 1933, but falling again in 1937 to 13,188 metric tons.

Germany came second, importing in 1930 3,135 metric tons and in 1932 13,288 metric tons. Since then these imports slowly fell off, to cease completely in 1937. The German butter quota system of 1932 led to a re-grouping of the countries exporting to Germany, and this led to a sharp fall in her imports from the U. S. S. R. Thus in 1932 the U. S. S. R. was the largest exporter of butter to Germany, while in 1933 she had fallen to sixth place.

In addition to these two markets, Italy took 3 per cent. of Russia's exports of butter in 1934. In recent years, however, these exports have entirely ceased.

In the last few years butter has also been exported to the United States, who in 1936 took 4.1 per cent. of Russia's exports of butter. Small quantities of butter have also gone to Mongolia, amounting to about 1 per cent. of Russian exports.

(The third and last section, to be given in a later issue, will deal with the wood and fur trades).

M. TCHERKINSKY.

ECONOMIC AND CULTURAL CONSIDERATIONS ON THE FIBRE-AGAVES

I. — The different hard fibre plants.

Since very early times Agave plants have been used in Mexico for the bleeding sap that flows from the centre of the plant after cutting the flower-stem. This sap is produced very abundantly over four or five months of the year, yielding up to a thousand litres of juice per plant. In Mexico this is converted by fermentation into alcoholic beverages, partly into a brandy called *pulque*, partly into a wine called *mescal*. Furthermore, in the countries of origin Agaves were used as a source of fibre; today, these countries are the biggest furnishers of hard fibres called "Sisal" or "Henequén". In addition to the Sisal plant (*Agave* sp.) the principal hardrope fibre plants now used are the Manila hemp (*Musa textilis*), the Coconut fibre (*Coir*, *Cocos nucifera*), the Mauritius hemp (*Fourcroya gigantea*), the Sansevieria fibre (*Sansevieria* sp.), the New Zealand hemp (*Phormium tenax*) and the little known Carô plant of Brazil (*Neoglaziovia variegata*). None of these plants was widely used until 1850, when in Yucatán (Mexico) the *raspador* (decorticator) was invented for the preparation of the Henequén fibre, and Manila hemp began to come into ever wider use, superseding the true hemp, i. e. the fibre derived from the stalks of *Cannabis sativa*.

TABLE I. — *World Export of Hard Rope Fibres.*

(Metric tons)

Territory	1934	1935	1936	1937	1938
Dutch East Indies, all sorts . . .	69,948	93,430	78,217	86,602	84,328
Philippines "Maguey"	10,760	14,725	21,707	15,585	6,014
" Sisal "	—	—	131	747	
<i>Total Asia</i>	80,708	108,155	100,055	102,934	(¹) 90,342
Portuguese West Africa	3,922	4,364	4,907	—	—
Tanganyika	73,670	83,999	81,844	92,082	157,420
Kenya	24,400	33,200	35,302	31,775	
Uganda	—	561	1,451	891	
Nyasaland	—	—	468	893	
Portuguese East Africa	18,955	21,138	20,131	21,887	9,652
Madagascar	1,919	2,511	2,476	2,637	
Senegal (French Sudan)	2,552	3,367	2,631	3,110	
Ivory Coast	1,159	876	1,002	913	
Belgian Congo	199	110	579	—	
Togo	—	2	—	—	
French Guinea	463	432	380	367	—
<i>Total Africa</i>	127,239	150,560	151,175	(¹) 160,000	(¹) 167,000
Brazil	—	137	—	—	—
Mexico	68,321	89,751	72,180	93,472	76,200
Panama	—	117	—	—	—
San Salvador	15	163	871	—	—
British West Indies	21	617	2,230	15,240	15,240
Bahamas	—				
Jamaica	—	—	—	—	—
Cuba	1,928	5,993	5,660	—	—
Haiti	6,046	4,988	5,670	—	—
Dominican Republic	46	—	—	—	—
Colombia	—	15	—	—	—
Argentina	—	47	—	—	—
<i>Total America</i>	76,377	101,711	86,728	109,000	91,000
<i>Total Agave</i>	284,324	360,426	337,958	(¹) 372,000	(¹) 348,000
Manila Hemp (Philippines)	174,500	188,201	167,124	165,339	148,000
Mauritius Hemp	669	446	1,389	1,863	250
New Zealand Hemp	3,648	3,720	5,798	7,620	4,000
<i>Grand Total</i>	463,141	552,793	512,269	(¹) 547,000	(¹) 500,000

(¹) Estimate

The figures for 1938 are taken from the *Annual Review* of Messrs. Wigglesworth & Co. Ltd., London.
The other figures are reprinted from the *Bulletin of the Central Bureau of Statistics*, Batavia 1938, Landsrukkery.

TABLE II. — *Export of Hard Fibres from Producing Countries* ⁽¹⁾.
(Metric Tons)

Destinations	Dutch East Indies	East Africa ⁽¹⁾	Philippines	Mexico	Grand Total Round figures
	1935	1935	1935	1933	
Netherlands	19,658	5,240	1,297	2,031	28,100
Great Britain	1,292	36,629	44,377	—	82,100
Germany	10,101	14,496	3,203	—	27,800
France	1,217	4,346	4,202	813	10,500
Belgium	7,401	34,680	4,388	16,750	63,000
Italy	425	1,336	1,448	—	3,200
Spain	1,365	1,454	2,355	—	5,000
Denmark	953	75	1,682	—	2,500
Norway	549	5	1,950	—	2,500
Sweden	1,231	150	776	2,032	4,100
Baltic States	127	10	—	—	140
Balkan States	54	12	—	—	77
Canada	2,467	3,787	3,667	—	9,800
United States of America	38,734	9,207	44,474	77,419	169,900
South America	20	2,061	617	—	2,700
Egypt (Egyptian Sudan)	508	1,065	—	—	1,500
Union of South Africa	173	371	—	—	540
British possessions	66	151	1,509	—	1,700
Japan	682	—	66,801	—	67,400
Australia	4,126	35	3,395	—	7,500
New Zealand	257	47	517	—	800
India	—	12	1,140	—	1,150
Palestine (Cyprus)	—	10	—	—	10
Portuguese possessions	—	25	—	—	25
Turkey (Syria)	—	76	175	—	250
Iran	—	23	—	—	23
U. S. S. R.	—	59	—	—	60
Arabia	—	19	—	—	20
Czecho-Slovakia	—	5	—	—	5
China	—	—	227	—	230
Unknown	880	—	—	15	900
<i>Total</i>	92,346	115,386	188,200	99,060	—
<i>Tow</i>	1,084	—	—	—	—
<i>Total value</i>	7,293,325 guilders	1,570,440 Pounds sterl.	22,947,933 Pesos	15,660,967 Mex. Pesos	—
<i>Value per metric ton or 1,000 kilograms</i>	78.98 guilders	13. 4. 0. Pounds sterl.	121.93 Pesos	158.10 Mex. Pesos	—
<i>Value per long ton in pounds sterling</i>	10. 14. 10.	13. 4. 0.	12. 5. 0.	10. 14. 0.	—
<i>Export of manufactured cordage in long tons</i>	—	2,036	8,006	—	—

⁽¹⁾ According to official statistics. More recent figures for Mexico were not available.
⁽²⁾ Long tons.

However, the cultivation of Manila hemp remained limited to the Philippines and there it was mainly confined to the "hemp provinces", which are in the southern parts of Luzon and in the Visayas Islands (Camarines, Albay and Leyte). Attempts to extend the cultivation of Musas elsewhere failed owing to the special requirements of this plant as regards climate and soil. In south Sumatra (Lampung) two plantations exist, but their output has not for some years exceeded 200 to 300 metric tons. Nevertheless, the export of Manila hemp rose steadily, reaching 90,000 metric tons in 1900, passing the 100,000 tons mark in 1906, and reaching a peak of nearly 190,000 tons in 1935. But Manila hemp has also found competitors in Sisal hemp and, to a much smaller extent, in the Mauritius and New Zealand hems. The Sisal, a plant originating from the semi-arid regions of South and Central America, especially Mexico (Yucatán), grows fairly well throughout the tropics and subtropics on soils where other plants such as coffee, tea and rubber could not yield sufficient crops.

In the last few years, the hard fibre plants have attracted special attention on account of the disappearance from the European market of some of the soft fibres. Since 1932 the export of flax from the U. S. S. R. has ceased. The policy of the Italian Government in regard to Italian hemp results in home-produced fibres being held back from the open market. The *Federcanapa* maintains prices at a level considerably above those at which other competing fibres are being sold, with the result that the export trade has been on a very limited scale except to Germany, which country is said to have purchased about 30,000 metric tons on the barter system. On account of this scarcity of supplies in the soft fibre market great efforts have been made to replace these fibres by hard fibres, of which the spinning process has been greatly improved. Nowadays one finds Sisal used in the production of yarns, lines, carpets and mats and other products for which formerly hemp alone was used.

II. — Production and trade of hard fibres.

From Table I we see how, owing to its adaptability to climate and soil, Sisal cultivation has now spread over the hot countries of the whole world. In addition to the countries named in the Table we find some production also in the Mediterranean countries, which, however, is only for local consumption.

Furthermore, we see from Table I that:

1. Manila hemp, also known as *Abacá*, is no longer the principal hard fibre produced. In the last two years Sisal fibre production has passed that of Manila hemp and is now more than twice as great.

2. The total output of hard fibres is fairly well distributed between the different nations:

U. S. A. territories	181,500	metric tons or	33 %
British "	151,000	" " "	28 %
Dutch "	86,600	" " "	16 %
Mexican "	93,500	" " "	17 %
French "	6,000	" " "	1 %
Portuguese "	26,000	" " "	5 %

3. The three most important producers of Sisal, namely the Dutch East Indies, Tanganyika and Mexico contribute nearly equal shares to the world output of Agave fibres.

As regards the trade in hard fibres, Table I shows that in 1937 and 1938 the total exports underwent the following fluctuations. In 1937 the exports of Sisal rose by about 35,000 tons above the 1936 figure, whilst the exports of Manila and other hems hardly showed any change. In 1938, however, the former showed a decrease of about 24,000 tons and the latter of about 23,000 tons on their 1937 figures. Therefore the total exports of hard fibre, which in 1937 had risen by about 35,000 tons as against 1936, in 1938 fell by about 47,000 tons as against 1937.

Table II shows the destinations of the exports from the producing countries. Except in the case of Mexico, of which the United States absorb nearly 80 per cent. of the exports and Belgium and Holland as the main countries of entrepôt trade for hard fibres take the remainder, the exports from the Dutch East Indies and from East Africa are fairly well distributed over the whole world, so that all countries with mercantile or fishing fleets have their needs satisfied.

There are now some eight countries absorbing the bulk of the exports. Of these the United States of America are by far the largest with 170,000 metric tons; next comes Great Britain with 82,000 tons, followed by Japan with 67,000 tons, Belgium with 63,000 tons, Holland with 28,000 tons, Germany with 27,000 tons and France and Canada with 10,000 tons each. Belgium, however, serves mainly as a country for entrepôt trade, importing according to her own statistics (1937) only 35,395 and 6,947 metric tons of Sisal and Abacá respectively, of which 16,165 tons of Sisal were re-exported, mainly to France, Germany and Russia, as raw fibre.

III. — Utilization of hard fibres.

The utilization of hard fibres varies according to the different countries.

In the *United States of America* and *Canada*, Henequén is used more than any other fibre in the manufacture of binder twine (600 to 650 feet per pound) for harvesting grain. There was an ever increasing demand for this purpose from 1888 to 1916 when wheat prices, like nearly all prices, were rising. Since then there have been periods of over-production and also periods of scarcity. However, the increasing use of the "combine" (combined harvesting and threshing machine), is reducing the demand for binder twine. Moreover, the rapidly increasing production of Sisal has resulted in serious competition for Henequén. Now both fibres, alone or mixed together with or without Abacá, are also used for hammocks, general purpose ropes, halter ropes and to some extent for marine cordage. Finally in the United States we find Sisal used in combination with cotton for the manufacture of coarse canvas and of sacks.

In the *United Kingdom*, the next largest consumer, the depression of the Sisal industry in 1930-31 led to an examination of the possibilities of developing new industrial uses for Sisal fibre. In other countries such as Holland efforts

have been made to use Sisal as a substitute for Jute and to break its monopoly in sack manufacture. But such a policy would not be appropriate for Britain, as Jute is also an Empire-grown fibre plant. Therefore the Imperial Institute of London has made efforts to find other uses for Sisal and to diminish reliance on Manila hemp, which is not much grown within the Empire. For this reason the Admiralty was induced to undertake experiments in order to overcome the prejudice against the use of Sisal for marine cordage.

These experiments have given good results, and the tests covered a wide range as over 100 ships and other users participated in them. Incidentally, a good many complaints arose, but only four instances of actual parting of the cordage during use were reported. The following defects can, however, be definitely regarded as peculiar to marine cordage made exclusively from Sisal:

(1) It shrinks in length when wet and requires continual care in wet weather.

(2) It swells when wet.

(3) It elongates considerably under load, particularly when wet, and in some cases becomes definitely long jawed. Under some conditions it tends to return to size after the load is removed, but generally the extension is more or less permanent.

(4) It becomes greasy and slippery and is difficult to handle when wet, and greater care is necessary when working it round a cleat or bollard.

(5) After prolonged use it tends to chafe and fray and becomes discoloured.

On account of these results, the Admiralty has made the following recommendations:

"In considering the results of the trials, the question of Sisal being an Empire product must be given prominence. If the two fibres, Sisal and Manila, were on equal footing as regards their origin, the results would not warrant any departure from the existing practice. As, however, the policy of the Admiralty is to give a preference to Empire products the results are sufficiently promising to warrant the partial adoption of Sisal, and (so long as supplies of Sisal can be obtained at satisfactory prices) arrangements are being made for 50 per cent. of the Service requirements for towing hawsers, heaving and hauling lines to be made from Sisal, as also for its entire adoption in the manufacture of much other cordage of minor importance in navigation".

Again in 1933-34, the Admiralty made experiments in order to ascertain the capacity of Sisal to absorb tar and to test whether cordage so treated would have its weather-resisting properties increased. To carry out the tests, four 120-fathom coils of 3-inch cordage were manufactured. All the yarn used for this purpose was from the same delivery of No. 1 East-African Sisal. Two of these coils were tarred and two untarred. The two tarred coils were prepared in the usual manner, i. e. the yarn was passed through a bath containing Archangel tar. The quantity absorbed by the fibre was 12.87 per cent. of the weight of the finished coil. During the process of manufacture a batching compound was used, about 4.5 per cent. being used for dressing the fibre which was subsequently tarred, and 12.5 per cent. for the untarred fibre.

The initial strength of the untarred yarn before manufacture into cordage was 175.4 and of the tarred 163.6 lb. Strands removed from the cordage at the end of the nine months' test period gave the following results (average of ten tests):

	Sea exposed	Roof exposed	Storage conditions
Untarred	72.0	95.0	161.0
Tarred	132.5	139.5	150.5

The Admiralty considered the results of these tests sufficiently satisfactory to warrant consideration of the general adoption of tarred Sisal cordage in lieu of tarred hemp cordage, and enquiries are now being made as to the extent to which such substitution can be effected.

In *Japan*, the third largest consumer, importing some 70,000 tons of hard fibre, this commodity is used principally for marine cordage, but also for many other products such as coarse canvas, mats, blinds and brushes. In Japan too Sisal has been largely used for the manufacture of braids used in the ladies' hat industry. Small factories for this purpose have sprung up in Japan due to the encouragement and activities of the Home Industrial Association of Japan, and the braids made are shipped to all parts of the world. The use of Sisal for the manufacture of shoe tops is also recorded in Japan.

In *Belgium* such of the import as was not re-exported as raw fibre was absorbed by the large textile industry and mixed with the waste of other fibres. In 1937 13,702 metric tons of mixed fibres were manufactured into ropes, cables and lines and exported to Norway, France and England; 8,531 metric tons were used in the production of coarse yarns, half of them exported to France; and the remainder were used for mats and carpets.

In *Germany*, the bulk of the imported hard fibre (mostly Sisal) is used for marine cordage, the German navy having been equipped exclusively with Sisal ropes during the Great War. The rest is manufactured into binder twine, general purpose lines and strong coarse threads.

Of the other importing countries, *Holland* chiefly deserves mention on account of the investigations being made in the mother country and the colonies into the manufacture of sacks out of Sisal fibres. However, this plan is by no means new. In 1933 it was reported that some 50,000 sugar sacks were on the way to, or had been landed at Liverpool, and that there were some 3,000,000 sacks in Mexico to be used for packing produce for shipment. These sacks were manufactured under Government instruction in order to restrict the import of Jute. Also in Colombia, a local industry for the manufacture of sacks has grown up amongst the native population; and during the War, in 1918, it was recorded that Bucaramanga exported over 1,000,000 sacks, and another town exported over 200,000, representing 1,200 tons of fibre. In 1932, the Government of the Dutch East Indies ordered that experiments be begun in the manufacture of bags from Sisal fibre by prison labour. This has been started especially on the island

of Madura where many wild or semi-cultivated Agaves grow, and where the State salt monopoly requires some hundreds of thousands of coarse bags each year. Owing to the cheap prison labour the yarn is spun by hand and only industrially woven on looms in the prison of Pamekasan. The production was as follows:

1934	150,000	large	bags				
1935	210,000	"	"	and	6,000	small	bags
1936	300,000	"	"	"	8,000	"	"

The large bags measure 107.5 cm. by 75 cm. and the small ones 60 cm. by 75 cm.

In the year 1933 the *Handel Vereeniging Amsterdam* reported the installation of an experimental factory equipped with modern English plant for the manufacture of bags in Java.

But in Rotterdam already as early as 1927 a Sisal rope factory tried to introduce the manufacture of bags, and it is said to have exported Sisal bags to America. Also this factory has begun to deliver sacks to the dealers in coal for domestic uses, the bags being superior for this purpose to the Jute bags formerly used.

On the strength of these efforts to look for a market for the hard fibres, the Trade Museum of the Colonial Institute of Amsterdam induced some importers to initiate experiments with Sisal bags in the overseas trade in colonial commodities. Accordingly small lots of pepper, copra, cocoa and nutmegs were shipped from the Dutch East Indies to Rotterdam and small lots of coffee and oil-palm kernels from the Congo to Antwerp.

The bags had an average size of 105 by 70 centimetres and an average weight of one kilogramme, corresponding to a weight of 680 grammes per square metre. Jute bags from Bengal showed the following figures:

A twills 110 × 65 cm. 1.19 kg. = 830 gr. per sq. m.

Light C 100 × 70 cm. 0.91 kg. = 650 gr. per sq. m.

Thus, as regards weight, the Sisal bag did not compare unfavourably with the Jute bag. However, it was anticipated that the Sisal bag, being less smooth and flexible, might be harmful to the content.

With regard to pepper, this harmful effect proved to be negligible, and the opinion of the consignee was completely favourable.

In the case of cocoa, a commodity of superior quality, the Sisal bag was considered to behave less favourably. The bags were too badly and loosely woven, and the slight damages so easily done to the bag by handling in transport and by taking samples, could only be repaired with difficulty owing to the lack of smoothness of the tissue. Threads drawn through for repairs opened the tissue next to the damaged part, so that the repairing caused more harm than did the original damage.

The same opinion was passed as regards the transport of nutmegs in Sisal bags.

In the case of shipments of copra in Sisal bags, the opinion of the consignees was altogether favourable. These experiments resulted in the Association for the Copra Trade allowing the use of Sisal bags as well as of Jute bags in the

standard contracts. However, the consignee is permitted to deduct 4 Dutch cents per bag owing to the lower value Sisal bags have in the trade in old bags.

The small Sisal bags delivered by the Dutch factory for the transport of ores from the Congo found a ready acceptance.

On the other hand, those delivered to the tin mines in the Dutch East Indies were rejected on account of the lack of density of the tissue, which resulted in the ground tin leaking out. However, in the same country the shipment of unground manganese was permitted and the use of Sisal bags met with no objection.

To summarise, the Amsterdam Museum of Trade concludes that:—

a. The Sisal bag does not present any difficulties in the shipping of pepper, nutmegs of inferior quality, coffee, copra, oil-palm kernels and loose salt, but it is unsuitable for the transport of cocoa. The Sisal bag also is unsuitable for ground tin and ground manganese, but may well be used for unground ores.

b. The difficulties in the use of Sisal bags are mostly due to the lack of smoothness of the tissue, making it nearly impossible to repair the damages occasionally done in handling and in the taking of samples. In any case Sisal bags are less easily repaired than Jute bags.

c. The Sisal bag is used frequently in the shipment of coffee from Central America.

IV. — Prices of Sisal.

After these remarks on the uses of Sisal the next consideration is that of prices, especially in relation to the prices of the competing commodities.

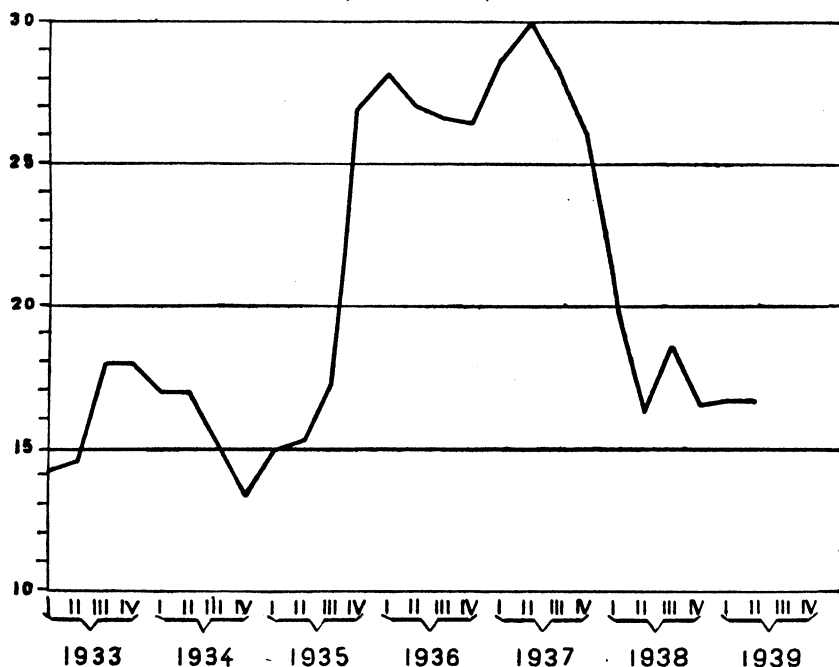
The use of Sisal in the manufacture of sacks cannot bring much relief to the Sisal market. For this purpose use can generally only be made of tow and inferior qualities of fibre, especially of Cantala owing to its better flexibility. For the producer, the pivot price of Sisal lies near £ 15 per long ton, this being the average total cost price in the main producing countries (see part VI). During recent months the London price of No. I. quality has again approached this pivot, thus facilitating the use of Sisal for different purposes. However, in times of better prices the competition which Sisal has to meet depends largely on the prices of other commodities serving more or less the same requirements. The yearly average prices in London of commodities competing with Sisal during 1933 to 1937 are set forth in the following table taken from the International Year-book of Agricultural Statistics, 1937-1938.

	1933 L.s.d.	1934 L.s.d.	1935 L.s.d.	1936 L.s.d.	1937 L.s.d.
Jute "First marks"	15. 13. 2	15. 9. 9	18. 11. 8	18. 6. 8	20. 8. 9
Manila Hemp "J. 2" grade . . .	15. 18. 2	14. 17. 8	19. 4. 3	28. 1. 1	33. 16. 10
Sisal No. 1 East African	16. 8. 7	15. 9. 5	19. 7. 11	27. 9. 2	27. 4. 8

According to this table, the prices of Sisal and Manila have followed a more or less equal course, but the competition of these two with Jute in the years 1936 and 1937 must have raised difficult problems for spinners, even if it is taken into account that tow and waste of hard fibres generally cost £ 3-4 less than No. I quality.

In Europe only the use of the most modern spinning methods may possibly allow competition between Jute and Agave fibre and their mutual substitution, as the latter cannot be spun as fine as Jute. Therefore, for the same surface of twill, the quantity of Sisal fibre required considerably exceeds that of Jute and so makes competition impossible. Hence also, the substitution of the cheap Caroa fibre of Brazil is handicapped owing to the smaller experience of spinning in that country and to the less modern plant used.

Trend of Prices c. i. f. London.



In consequence of these limited possibilities of sale, the prices of Sisal fluctuate very much. As can be seen from the graph, years of high, profitable prices alternate with years of very low, unremunerative prices, and it is difficult to find adequate reasons for these fluctuations. Therefore it can only too easily be understood that Sisal planters look for uniform restrictions on production and speak of agreements to be made as regards selling prices. In September 1934 a meeting was held in London, wherein participated representatives of the main producing territories, i. e. the Dutch East Indies, East Africa, Mexico, the Philippines and New Zealand which agreed "in principle" to the adjustment of the outputs of the territories to world consumption. This meeting - perhaps indeed as a result of it - was followed by a general rise of prices of hard fibres. Since then, however, nothing further has been done to apply this remedy of "adjustment of prices", nowadays so very popular in the trade of most other commodities.

In the case of Sisal one must be very doubtful as to the success of any such agreement, as it would be very difficult to gather the many producers together into one scheme. For instance, some countries such as Mexico, have a definite market assured them by their geographical situation, whilst other producers, e. g. of Cantala, are assured of a market by a certain standardisation of their product. Last, but not least, in the Dutch East Indies, some 50-60,000 tons are controlled by one large and powerful company which is in general opposed to agreements with weaker companies.

V. — Different cultivated agaves and the characteristics of their fibres.

The literature on Agaves contains many incorrect statements regarding the classification of species, owing to the fact that many botanists have only studied dry herbarium species or green-house cultivated plants. The different species are adapted to certain conditions of soil and climate, and they also vary in size, quality of fibre, length of life and other important economic characteristics. It is therefore well to classify the plants.

The following eleven species are the principal ones, three of them only being at present of commercial value, but the others may become of more importance as a result of the researches on new-fibre Agaves being carried out in the Amani (Tanganyika) Experimental Station.

The three most important species of commercial value are:

- (1) *Agave fourcroydes*. Lemaire.

Henequén (pron: Hen-e-ken), Spanish name.

Sacci (pron: ssak-ki), Maya-Indian name.

Botanical synonyms: *A. rigida elongata*, *A. elongata*, *A. ixtle*, *A. rigida longifolia*.

Native in Yucatán (Mexico) and cultivated there. It constitutes more than 90 per cent. of the fibre of commerce. The plant is propagated from suckers, bulbils or seed. Suckers are used in practice. It develops a trunk and the leaves thereon are 1 to 2 m. long and always glaucous (grey-blue). Marginal spines always present, curved with points downward. The flower-stalk is 4 to 8 m. high with rather stout horizontal branches, forming seedpods.

- (2) *Agave sisalana*. Perrine.

Sisal (Original Spanish name of port of shipment).

Yaxci (pron: jash-ki'), Maya-Indian name.

Botanical synonym: *A. rigida sisalana*.

Native of Central America, not cultivated for fibre in Yucatán. Commercially cultivated in the Bahamas, Turks and Caicos Islands, Hawai, Java, Tanganyika, Kenya and Uganda, Bengal, Indo-China and Congo. It is mostly propagated by suckers. The leaves are dark green or slightly glaucous and 1 to 1.75 m. long. Usually no marginal spines but occasionally small spines pointing downwards. The flower-stalk is 4 to 8 m. high with slender branches projecting upward. It will endure a wider range of conditions of growth than Henequén. Seedpods only on cut poles.

- (3) *Agave cantala*. Roxburgh.
Nanas sabrang (Java).
Manila Maguey (Philippines).

Synonyms: *A. cantala*, *A. vivipara*, *A. rigida elongata*, *A. elongata*. Was introduced into the Philippines, India and probably Java in early Spanish times and not known in native wild condition in America; mainly cultivated in Java and the Philippines. The plant is propagated from suckers or bulbils; seed pods are not reported. The leaves are glaucous and 1.50 to 2 m. long. The marginal spines are hooked or curved pointing upwards. The flower-stalks are 4 to 7 m. high and slender. *Cantala* grows well on loam soil and endures moisture better than either *Sisal* or *Henequén*.

The Fibre-Agaves of minor importance are the following species:—

PLANT	FIBRE	LOCALITY OF PRODUCTION
<i>Agave tequilana</i> Trelease	<i>Tequila</i>	Jalisco
<i>A. zapufo</i>	<i>Zapufo fina</i>	Vera Cruz, Tamaulipas
<i>A. Lespinassei</i> Trelease	<i>Zapufo fuerte</i>	" " "
<i>A. Deweyana</i> Trelease	<i>Zapufo larga</i>	" "
<i>A. lophantha</i> Schiede (= <i>Leguilla</i> Torr.)	<i>Tula ixtle</i> (Tamico)	Mexico
<i>A. falcata</i> Engelm.	<i>Guapilla</i>	
<i>A. striata</i>	<i>Espadinin</i>	
<i>A. cocui</i> Trelease	<i>Dispopo</i>	Venezuela

All Agave fibres are produced by the leaves, the stem is mostly contracted and also if developed does not yield fibres. In the Agave leaves three main zones of fibres can be delimited:—

(a) A peripheral zone, composed of one or more rather irregular rows of small fibres. These are of nearly circular cross section.

(b) A median line of large fibres. These are horseshoe-shaped in cross-section, containing a conducting strand in the open side of the crescent, and a smaller fibre opposite to the xylem of the strand.

(c) Fibres in the ground-tissue of the leaf. These form a series between the fibre-types of zones *a* and *b*.

Agave fibres fall into three types, all fairly well defined:—

(1) "*Mechanical*" fibres. — These are most strongly developed round the periphery of the leaf, though they also occur scattered through the leaf parenchyma. They vary in length from a few centimetres to almost the length of the leaf. These fibres are of great importance commercially, as, owing to their shape, they seldom divide during the process of manufacture. The "fineness" of a fibre sample therefore depends, from a commercial standpoint, almost entirely on the fineness of these fibres.

(2) "*Ribbon*" fibres. — These invariably occur in association with the conducting tissues. They run from base to tip, and if the fibres of a leaf are classified on the basis of length, the longest classes are entirely composed of these fibres. They are also important in that they readily split longitudinally, and in this way form a contrast to the mechanical fibres. The fineness of commercial fibres, therefore, is not dependent upon the original size of these fibres.

(3) "*Xylem*" fibres. — These fibres are of no commercial value as they are thin-walled, and invariably broken up and lost during the process of decortication of the leaf.

Generally speaking, no important differences exist between *Henequén* and *Sisal* fibres, such as do exist between *Sisal* and *Cantala*. Furthermore, these differences are only to be distinguished microscopically and are not always reliable.

The ash of Agave fibres fairly regularly contains prismatic pseudocrystals of calcium, originating from the oxalate of lime of the Agave leaves. These pseudocrystals are changed into needles of sulphate of lime by addition of sulphuric acid. On account of these incrustations of the ash, fibres of Agave may easily be distinguished from the Manila hemp fibres. Its ash contains only stegmata which remain after the treatment of the fibre with chromic acid. The stegmata are amorphous substances of silicium.

Agave-plants require a tropical climate. There are no commercial Agave-plantations outside the tropics. While the plants often survive temperatures of 2 to 15° C. below freezing point, they are sometimes also injured by cold even above freezing point. Henequén plantations have been worked almost under the Tropic of Cancer near Victoria, Tamaulipas, where light frosts occur nearly every winter. The bulbils and tips of the leaves are sometimes injured by the cold weather. But such damage is also reported from East Africa within the area of the tropics, where the Sisal is injured by heavy fogs during the early morning.

The average annual rainfall in the Henequén-growing areas of Yucatán is about 30 inches (750 mm), and the lowest recorded temperature is 10° C., but it is usually very dry in winter. The climate is arid, with an abundance of bright sunshine. In Java, Sisal grows in well drained soils with an average annual rainfall of more than 100 inches (2,500 mm).

Rains and fogs interfere with the drying of the fibre.

VI. — Producing countries of hard fibres and their methods of cultivation.

East Africa.

East Africa has become a most important producer of hard fibre so that it now stands level with the Philippines. Tanganyika Territory contributes the biggest share of Sisal fibres to the East African output, its export of this commodity indeed considerably exceeding that of such other products as coffee, cotton and gold. The percentage of Sisal exports by value in relation to the total exports of Tanganyika was as follows:—

1933	34.7 %
1934	32.0 %
1935	32.9 %
1936	41.5 %
1937	41.8 %

The value of the next most important products exported, such as cotton, coffee and gold amounted in 1937 only to 12.1, 10.6 and 8.6 per cent. respectively.

The principal export harbours from Tanganyika Territory are Tanga and Dar-es-Salaam, which together take more than 70 per cent. The export harbour for Kenya is Mombasa.

The past year has proved most disappointing to Sisal producers, quotations moving for the most part within narrow margins resulting in an average price of about £ 17. 5s. for No. I grade. This figure is quite unremunerative to planters, giving them little encouragement to develop their estates any further. Hopes were raised of substantial sales of fibre resulting from the record sowings of wheat and reports of favourable weather prospects for grain crops throughout

the world. Therefore some disappointment was caused when binder twine prices for the season were fixed in America at one half cent per lb. below those of the previous year. During April the larger-scale buying on the part of Continental consumers caused a sharp upward movement, but this eventually slowed down owing to the fact that American spinners continued a cautious buying policy. One favorable feature is that most of the estates are well sold in advance, while stocks are low both in Africa and in Europe. The production of Africa has exceeded expectations, exports from Tanganyika again showing an increase of about 10,000 tons over last year, whilst the Kenya production is approximately the same as in 1937. Meanwhile, under the influence of constantly low prices, much work that is necessary to keep estates in good order is being postponed, pending a return to a profitable price level.

Adversity has prompted the African Sisal industry to introduce measures aiming at closer co-operation between Africa and London, as a result of which the Sisal Growers' Association has been constituted in London to represent the Growers' Associations of Tanganyika and Kenya and to look after Sisal interests generally. Further measures are in contemplation which, it is hoped, will eventually bring stability to the trade with a view to maintaining such conditions as will yield a fair return to producers.

Working in conjunction with this movement the Merchants' and Brokers' Section has been reorganised under the aegis of the London Chamber of Commerce, this section dealing with matters concerning quality, grading, packing, claims and contract conditions.

An unexpected step has recently been taken by the Tanganyika Government in promoting a bill entitled "The Sisal Industry Ordinance", the object of which is to provide for the registration of Sisal plantation and estate marks, to supervise the grading and packing of Sisal, and to take other measures for the promotion and protection of the industry.

Sisal tow values have kept fairly steady and the production has found a steady market, a large proportion being used for bag manufacture and also for bedding and upholstery purposes.

In East Africa two large centres of Sisal planting exist: Tanganyika and Kenya. The former extends mostly in the triangle between Tanga, Pangani and Korogwe, in the hot lowlands near sea level; the latter has its greatest concentration within fifty miles towards the north and east of Nairobi, at an altitude of some 1,500 to 2,000 metres above sea level. Here Sisal is planted in areas with an average rainfall of 600 to 700 mm. The highlands enjoy a cool climate during most months of the year, whereas the climate of the coastal belt of Tanganyika, where most of the Sisal of that territory is grown, is hot. The rainfall varies from 1,000 to 1,500 mm. yearly, in both centres fairly well distributed over the whole year, the main rains falling during April and May, the short ones during November.

In consequence of the cool climate the growth of Sisal in Kenya is prolonged in comparison with Tanganyika to nine years, and cutting cannot begin until the fourth year from planting, or a year later than in the warmer regions of Tanganyika.

In Kenya the soils are mostly red earths, laterized, or black or grey clay, whilst in Tanganyika sands overlying coral limestone prevail.

In Kenya the initial clearing of land for Sisal plantations is fairly easy on account of the original bush being sparse. The cost of bringing new areas into bearing in the fourth year of growth with the aid of diesel-engined tractors is between 150 and 180 sh. per hectare, while the replanting of old areas is about 30sh. cheaper. Methods in Kenya must of necessity be more thorough, and their results show that Sisal responds to superior cultivation. In the coastal plains of Tanganyika, where moisture is plentiful, weed control is the main problem.

Local conditions have determined the nature of planting methods in both instances. The cultivation of land for Sisal in Kenya is facilitated by using diesel-tractors, and elaborate though this method may seem, and longer though it takes to reach the cutting stage, it is no more costly than the primitive methods used for starting a Sisal plantation in Tanganyika by hand labour only.

In Tanganyika spacing is largely determined by the simple relationship between density of plants and yields. The number of plants is seldom below 4,000 per hectare and is commonly 5,000 or more, which is possible under a heavier rainfall. In Kenya the question of spacing is more involved, generally 2,250 to 3,360 plants per hectare being planted. However, these spacings have since been thought too generous, and the trend is now towards closer spacing in the row and wider distances between the rows.

In Kenya fibre yields are usually reckoned in long tons per acre per cycle instead of per hectare per annum as in Tanganyika. Five or six cuts are made per cycle, giving an average of 228 leaves from each plant during its life and yielding a total of about three long tons of fibre per acre. This is equivalent to nearly 1,500 kilogrammes per hectare per annum, which falls short by about half a ton, or occasionally much more, of yields obtained from newly planted areas in Tanganyika, which, however, may decline to the Kenya figure after regeneration by sucker selection. It is interesting that Kenya yields should compare so well, and they do so largely because Kenya leaves are of superior length and weight. Results show that short, spare leaf spells a rise in production costs.

It is indeed difficult to obtain reliable figures for yields per hectare of bearing area. Statistics are generally based on the weight per leaf, and all writers agree that the dry fibre content of the leaves is between 3 and 4 per cent.

Also as regards the cost price of the big plantations, very few reliable figures are available. Therefore it is of especial interest to find some returns in the "Times" (London) of July 28, 1936 given by Messrs. Sisal Estates Ltd. in their prospectus of that date. The Manager estimates that the long ton is produced at the following cost price:

	£	s.	d.
c. i. f. (London) costs, incl. selling expenses . . .	10	17	6
Provision for amortisation of growing crops . . .	2	0	0
Provision for depreciation of plant and machinery	1	10	0
Provision for contingencies	0	7	6
London office expenses	0	10	0
Total cost . . .	15	5	0

This may be the pivot price above which the profits begin, as is also seen from other sources.

Pests and plagues are not very often reported from East Africa. In the Tanga province (Tanganyika) only a weevil *Scyphophorus acupunctatus* Gyll. does much damage. It appears to have been introduced together with its host plant from its original home in Central America. It attacks young plants, weak plants and plants which have flowered. Its main breeding ground is the plant base subsequent to inflorescence ("poling").

Furthermore, it is reported that Sisal suffers from lack of potassium in different regions of East Africa. This point is discussed also in the section regarding the Dutch East Indies.

Dutch East Indies.

In this territory the production of hard fibres is not as important a part of the total output of agricultural products as in East Africa. In 1937, for example, the value of exported fibres amounted only to hfl. 14,897,255 (£ 1,655,250) or 2.3 per cent. out of a total export of agricultural products valued at hfl. 660,000,000 (£ 73,000,000).

The official statistics of area planted and production per province are incomplete, owing to the fact that big concerns, particularly the *Handels Vereeniging Amsterdam*, do not publish figures concerning yields and areas.

In Java there are eleven estates, all in the Surakarta Government which produce Cantala fibre only. In 1937 the area amounted to 6,374 hectares of which 4,816 hectares were in production. The total yield of Cantala was 4,588 metric tons of dry fibres. Quality has shown a high standard, being better than the "Maguey" of the Philippines. Although it has been possible to reduce working costs by exercising the utmost economy, it cannot be regarded as a profitable industry with the prices prevailing in 1938.

The Cantala market is a very restricted one, the demand being much smaller than that for Sisal fibre. Also, the Cantala plant is much more liable than Sisal to certain diseases which result in a reddened fibre. On account of its spiny nature it is also slightly more expensive to harvest, and therefore on big estates its growth has been more or less abandoned.

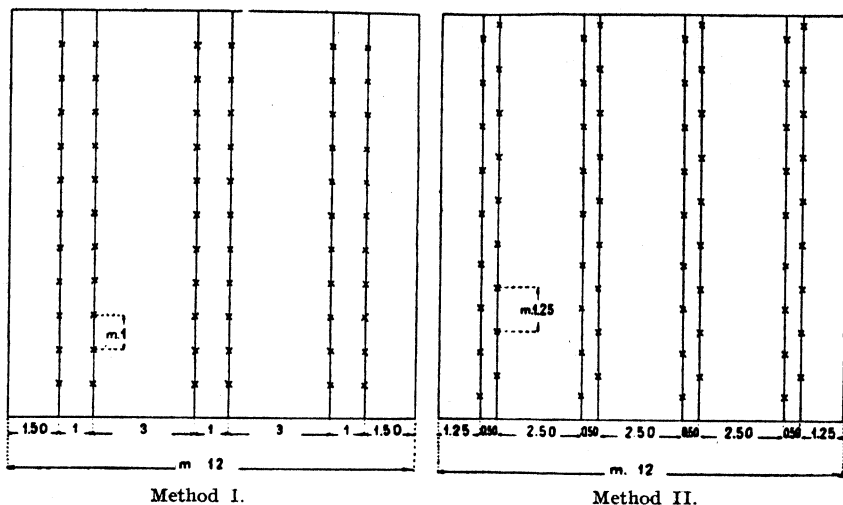
The methods of cultivation on one of the biggest estates of Java are the following. The suckers, or bulbils, or both, as they case may be, are planted in nursery beds, where they remain one year. They are then transplanted to the fields. The fields are divided into blocks, 12 metres (39 $\frac{1}{3}$ feet) wide and of the length of the field. Each block is bounded on either side by a drain about 50 centimetres in width and 60 centimetres deep, these drains leading to a main drain running along the side of each field. The plants from the nursery beds are set out in rows according to either of the methods illustrated in the diagram on the next page.

Method I was formerly almost exclusively used, but is now being replaced by method II, which facilitates cultivation around each plant, particularly after the plantation is one year old.

Harvesting of the ripe leaves commences when the plantation is about fourteen months old, and continues for about seven years. Two crops of leaves are obtained each year, the yield being 3 to 5 tons of fibre per hectare per annum.

Each year potassic and phosphatic fertilizers are applied at the rate of about 150 kilogrammes of potash (K_2O) and 100 kilogrammes of phosphate (P_2O_5) per hectare for Sisal, and the same amount of phosphate and half the amount of potash for Cantala, which is found to

Diagramme II.



possess about half the potash requirements of Sisal. Of course the quantity of each fertilizer applied must vary according to the type of soil in which the plants are growing.

After cutting the leaves are graded in the field according to length.

Leaves above one metre in length are placed in grade A.

Leaves between 75 centimetres and one metre are placed in grade B.

Leaves of between 50 and 75 centimetres are placed in grade C.

Broken and diseased leaves are graded X, Y, and Z instead of A, B and C according to length, those above 1 metre in length being placed in grade X, those between 75 centimetres and 1 metre in grade Y, and those between 50 and 75 centimetres in grade Z.

The Anglo-Dutch Plantations Co. Ltd. of Java reports that their fibre is produced at a cost of about £ 10. 15sh. per ton loaded on the ship. This includes field, factory and transportation costs, to which must be added depreciation and overhead costs. The factory costs are about £ 2. 10sh. per ton so that field and transportation costs must approximately amount to £ 8. 5sh. per ton. The total cost of production will be nearly the same as in East Africa.

In the Lowlands of Java on soils previously used for rice planting, a decided lack of potassium prevails, which gives rise to a peculiar under-development. This lack can be made good by planting green manure-plants, especially the deep rooting *Tephrosia candida*, which is worked under. But this does not work satisfactorily in the long run. Therefore, it is absolutely indispensable to give an adequate treatment with potassium, in order to avoid the typical appearances of disease caused by lack of potassium, and known also in other countries.

It can be seen from experience that in Java the cultivation of Agaves does not pay on estates where cheap transportation of the leaves is not possible. It is also not profitable on estates where, owing to poor soils or cool climate,

the production is less than 3,000 kilogrammes of dry fibre per hectare. It may be profitable on soils with little humus where humus-requiring plants, such as coffee, are not growing, providing these soils are naturally well drained and not more than 400 metres above sea level.

The cultivation of Agaves is most profitable in conjunction with the cultivation of other crops. Then it is not necessary to depend on Agaves alone or to cut more leaves than may be suitable for the best development of the plants in times of low prices. Estates suitable for a large central factory, permitting easy transport of leaves by rail from all parts of the plantation are preferable. It is not profitable to run estates of an area less than 500 hectares owing to the costly plant needed for the extraction of the fibres.

Mexico.

From the Henequén industry of Mexico only meagre information is available, so that it is difficult to judge the situation. Official reports concerning prices, output, shipments, stocks and sales effected are withheld, but from unofficial quarters it appears that the receipts in Progreso coincide very closely with shipments. Whether and to what extents stocks are accumulating inland is not apparent. A bulk sale of 150,000 bales was reported in March 1938, and as shipments go on, it is obvious that large-scale purchases must have been concluded on terms which have not been published. Shipments to U. S. A. ports account for about four-fifths of the quantity exported.

Conferences were held during the past year between the Henequén producers and the American twine spinners with the object of solving common problems; but as no further news has been received, one can merely assume that no general solution was found.

The Henequén industry appears to have had a fate similar to that of the oil industry of Mexico by coming under governmental control, the Sisal estates having been taken over and subdivided amongst the workers. The outcome of this important change may not be apparent for some time. Meanwhile the industry continues to be administered by the *Co-operativa de Henequeneros de Yucatán* under the new decrees.

On the method of cultivation of Henequén in Mexico, only very few reliable reports are available. Dewey some seven years ago gave the following details:—

The Henequén plant is regarded as native in the Yucatán Peninsula, but is not known in a wild condition except as an escape from cultivation. The plantations in Yucatán are all within the tropics and in areas entirely free from frost. The average rainfall in the Henequén-growing areas of Yucatán is about 750 mm. and the lowest recorded temperature is 10° C. Henequén endures drought better than Sisal, but in a protracted drought its leaves also become leathery, making it very difficult to clean the fibre.

Henequén requires a soil with good natural drainage. The plantations in Yucatán are mostly on porous lime rock, through which water from rains quickly sinks to the underground river. There are no streams or natural ponds on the surface in northern Yucatán.

Henequén grows best in the full sunlight. It is necessary therefore, to cut all trees and bushes. The bush and herbaceous weeds and grass are all burnt, and the land is cleared as

thoroughly as possible. Ploughing is practised where possible, but most Henequén plantations are on land too rocky for ploughing and regular cultivation. It is usually necessary to clear the land two to four times each year until the first harvest of leaves, or even oftener in regions of greater rainfall. Afterwards the land is cleared at the time of each harvest.

Particular attention is given to the size of the planted area and the number of plants thereon, for this is the basis of all field labour and estimates of production. Generally 2,400 plants per hectare are planted and suckers are used for planting. The roots and outer leaves are trimmed off. Small holes are dug, often with a pick, in rocky lands, and the bulb is set and partly covered with earth. In rocky land it is often necessary to prop up the suckers with small stones. After planting, the field is inspected at frequent intervals, and suckers that have fallen over are straightened up and those that fail to grow are replaced.

In Yucatán the first leave are cut in the sixth or seventh year, and afterwards usually two crops per year are cut for periods varying from ten to twenty years, or until many of the plants cease to put forward good leaves.

The leaves are cut one at a time with an ordinary butcher's knife. The terminal spine and marginal prickles are trimmed off and the leaves are tied in bundles, 40 or 50 per bundle. One man, with two assistants to trim off prickles, count, and tie the leaves in bundles and carry them to the roadway may cut 3,000 to 4,000 leaves per day.

VII. — Fibre extraction, grading and packing.

In the early times of fibre extraction raspadores were used. These are decorticators, single wheel-machines, where the wheel revolves rapidly in a case, with projections on its circumference, and a smooth metal surface. The workman puts the leaf into the raspador first from one side and then from the other so that the fibres remain. This machine was a great advance on the old process of hand scraping.

Nowadays on the big plantations completely automatic machines are used. The leaves on arrival at the factory are placed on endless-chain carriers, which convey them to the specially constructed decorticators, where they are drawn through two narrow passages, each bounded by a rapidly revolving solid wheel, with projections on its circumference and a smooth metal surface. The two wheels are on opposite sides of the machine, and revolve in opposite directions. In its passage between these wheels and the metal surfaces each leaf is scraped and the soft tissues removed, first along one half and then along the other. The fibres are washed immediately after each scraping process by a strong jet of water, which effectively removes the cortical tissues. This water containing bits of fibre and pulp, is then led in channels from the machines.

The fibre, on passing from the decorticators, is placed in centrifugal machines, where it is further washed by means of a jet of water which plays on the fibre for three minutes after the machine has been set in motion. The machines continue running for six minutes after the jets of water have been stopped. This removes excess of water from the fibre.

On completion of the washing process, the fibre is dried in large drying chambers through which steam pipes pass. Each drying chamber is also provided with a fan for the purpose of keeping the dry air in circulation.

In the dry, hot countries the fibres are mostly dried in the open air exposed to the sun, this having a good bleaching effect on the fibres.

The dried fibres are then beaten by hand labour on wooden bars supported about one metre above the ground or brushed by brushing machines constructed like the single-wheel decorticators having, in place of the projections, brushes on their circumference. These operations free the fibres from the remnants of cellular tissue adhering.

The fibre is then graded into three classes according to length, No. I class comprising lengths over 1 metre, No. II class comprising fibres of between 75 and 100 centimetres, and No. III class those of 50 to 75 centimetres.

Besides these there exists another class known as "tow". This contains short ends produced in the process of trimming the tufts of fibres during the grading operation. In this class is also graded the fibre cleaned from the bagasse.

The fibres ready for delivery to the trade are pressed into bales, containing 400 pounds or 200 kilogrammes each. The bales are fastened by thin strong wires without cover-mats.

VIII. — Recent scientific research-work.

Although the Sisal plant is outstanding in many respects as a fibre producer, the possibility always exists that more profitable varieties may be found or may be obtainable by breeding. *Hindorf* was one of the earliest writers to draw attention to this possibility, and also advocated intensive selection from among the established plantations in East Africa. But historical and cytological evidence indicates that *Agave sisalana*, in East Africa and probably universally, is a clone, i. e. the vegetatively propagated offspring of a single original plant. It is the general experience that selection within a clone does not lead to any great improvement. *Hindorf* sought diligently for seeds of this species, and is the first to record the production of fruits and seeds on cut poles.

Breeding.

Breeding experiments with Agaves were started at Amani (Tanganyika Territory) in 1929. Among the desirable characters of a fibre Agave are:

- (1) High yield.
- (2) Good quality of fibre.
- (3) A hardy and adaptable plant.
- (4) A plant easily and cheaply cultivated.

I. — Yield.

Yield is determined by the number of leaves produced and the amount of fibre in the leaf. The number of leaves produced during the life of the Sisal plant does not appear, from the limited data available, to vary greatly between individual plants grown under similar conditions. The number and size of the leaves produced are interdependent and largely influenced by environment.

For increased production, therefore, a more rapidly growing form with a higher total production of heavy leaves is indicated. In naturally occurring species prolific leaf production is usually concomittant with small leaves, but this does not mean that a combination of the characters for numerous and large leaves is unattainable.

In the Sisal Experiment Station of Ngomeni an experiment is in progress to compare different species of Agave.

Agave angustifolia Haw. was found to be a species outstanding for rapidity of growth and total leaf production. The plants under observation at Amani put on new leaves at approximately three times the rate of *Agave sisalana*. However, the leaf is short, light and contains only a small weight of fibre. The leaf margin is spiny, the fibre very fine. The maximum number of leaves produced by a plant of this species during its productive life is 510, compared with a maximum for Sisal of 230 under similar conditions. It is sexually fertile.

It is the aim of the selectionists to combine the prolific properties of *angustifolia* with the good and abundant fibre production of *sisalana* by cross-breeding. Successes are already being obtained.

Agave amaniensis Trelease and Nowell (Blue Sisal). The origin of this species is obscure, but it is said to have been imported from Berlin Botanical Gardens before the War, and was found growing under heavy shade in the Amani plantations. Producing a long heavy leaf with a non-spiny margin and containing a very fine fibre, this species is most promising. A sample of the fibre has been examined in a London laboratory. From the data obtained, it follows that a smaller weight of *Agave amaniensis* fibre would be required than of Sisal for rope of the same size, and the former fibre would be more economical. It is also somewhat lighter to handle. In consequence of its sexual fertility, a large number of seedlings have already been raised. These show segregations of forms with spiny and non-spiny margins.

Besides these two most promising species, many others - totalling 88 species and varieties - are grown in Amani and a great number of cross-breeds are in progress.

The Sisal grower would like an improvement in the proportion of fibre to leaf weight, but little indication is available that this can be obtained with any of the species till now under observation. In most species of Agave, the proportion of fibre is about the same as for Sisal. In Java a new species of Agave has been found which does not develop a flower stalk; it has as yet produced 600 leaves per plant.

2. — Good quality of fibres.

The fibres derived from Agave species form the conducting and supporting tissue of the leaf. The distribution of the fibres in the leaf tissue does not in general vary greatly in any of the species examined.

The general standard of quality of common Sisal fibre is considered quite satisfactory by the consumer for the purposes to which it is now put. Length, colour and strength are the main points considered in marketing. The Imperial Economic Committee in England points out that the absorption of supplies

depends largely on finding extended uses for this kind of fibre. From other sides it is stated that the future policy of the grower must be directed towards producing finer fibre. Therefore, a good deal of attention has been given to the conversion of Sisal fibre into a material suitable for fine spinning, in order to replace the softer fibres used in commerce. In the breeding programme, an important place has been given to the physical qualities of the fibre.

Colour of the fibre is connected with clean decortication. Leaves containing very fine fibre seem to be more difficult to decorticate cleanly, but this may be only a matter of mechanical adjustment and not a serious difficulty.

3. — *Hardy and adaptable plant.*

The Sisal plant is cultivated over a wide range of conditions. It is adaptable and singularly free from attack by serious pests and diseases. Only one species, the *Agave ingens*, appears to be very susceptible to attack by the Sisal weevil. Another, the *Agave Lespinassei*, is liable to diseases which are said to be due to soil deficiencies, banding disease, leaf scorch etc., susceptibilities to be looked for by the plant-breeder since they may be a serious drawback in otherwise promising types.

4. — *Good cultivable plant.*

The presence of spines on the leaf margin is a great disadvantage in cultivation. Plants with marginal spines take much longer to cut and are more difficult to cultivate than those without. The breeding of stable forms with non-spiny leaf margins is of great importance. The absence of marginal spines in *Agave sisalana* is not an immutable character, and *Agave amaniensis* (blue Sisal), typically a non-spiny form, occasionally produces bulbils and suckers with marginal spines.

Morphology of fibres.

Further investigations into the morphological, histological and mechanical properties of Agave fibres are being carried out in Amani. *Nulman*, plant physiologist of Amani, has given many details which may be found in the « Empire Journal of Experimental Agriculture » 1937 vol. V, pp. 75-III.

From his investigations it is learnt that fibre-fineness is only a question of species and not of leaf length. In view of the uncertainty as to the requirements of spinners, certain planters have cut their leaves while still short or have deliberately planted Sisal on areas where conditions give rise to a short leaf with the intention of producing a finer fibre at the sacrifice of length. The results show that this course will have little of the desired effect. If fineness is to be regarded as a desideratum, it can more readily be obtained by planting *A. amaniensis* or *A. cantala* which will produce fibres which are markedly finer than the fibres of *A. sisalana*.

The leaf of *Agave amaniensis* also contains many more and longer fibres than does *Agave sisalana*, and the proportion of mechanical to "ribbon" fibres is twice as great in the former.

Grading problems.

The experiments of *Nutman* have considerable bearing on the problems involved in the grading of the finished commercial product.

Till recently little information has been available on the fibre as it exists in the plant, as it is commercially shipped or as it passes through the various stages of manufacture. As a natural result, the personal opinions of both the producer and the consumer have become elevated to the rank of dogma.

Before considering grading in detail, it is advisable to assess the range of leaf-length which is normally obtainable on a well-run commercial estate. An adequately representative selection of the leaves to be measured can easily be obtained by taking leaves at random from the rapidly moving belt on which they are carried to the decorticator. Frequency distributions of leaf length proved to be from 45 to 155 centimetres.

As these leaves pass into the decorticator at random and as in each leaf the range of the fibre is from zero to the whole length of the leaf, it is obvious that the hank being bundled at the exit end of the decorticator contains fibres of the most different lengths. An aggregate of separate hanks passes through the handling processes, and the individuality of the hanks of each leaf is lost.

But also, if the leaves are graded according to lengths, and if each grade of the commercial product is fibre produced from a leaf of a given minimum length, each leaf contributes its complement of long and short fibres to the final commercial product.

However, a recent tendency has arisen to try to grade Sisal fibre on the basis of a minimum fibre length. The initiative in this direction has apparently come from the spinners, who claim that a minimum fibre length of 1 metre ($3\frac{1}{4}$ feet) for No. I fibre is necessary for efficient manufacture. This may well be true, but there does not exist any evidence on which this statement is based, nor does any attempt appear to have been made to confirm it by experimental means. It is quite certain that, at any rate up till recent years, such a material has not been prepared. In the absence of evidence as to the desirability of such a product, the necessity for grading on the new basis will depend on the state of the markets and the firmness or otherwise of the buyers' demands for a product of which they have, as yet, no experience.

It may be possible to combine grading on the basis of a minimum fibre length with the process of decortication. But this would prove uneconomical on most estates on account of the big percentage of waste produced in this way. Thus, it does not appear probable that the majority of Sisal-growing areas will find it possible to grade on a basis of a fairly high minimum fibre length unless some other *Agave* is substituted for *Agave sisalana*. The use of *Agave amaniensis* may conceivably solve this problem, since for a leaf length of 180 centimetres the waste would be less than 30 per cent. grading on a 90 centimetres minimum length. This length of leaf is, so far as our experience with this plant goes, likely to be obtained under the conditions prevailing in most of the Sisal-growing areas in Tanganyika.

It should, in addition, be noted that the longer fibres are also the coarser ones in any leaf, so that by removing the shorter fibres a coarser product will result. The future will decide whether a coarse, long uniform product is to be preferred to the fibre as at present shipped.

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INTERNATIONAL CHRONICLE OF AGRICULTURE

BRAZIL

Brazil's balance of trade in 1938 was a favorable one, but the surplus of exports was not great. Imports and exports amounted to 32,712,000 and 32,993,000 gold pounds respectively, giving a surplus of exports of 281,000 gold pounds.

Brazil continues to follow the two principal aims of her agricultural policy:- no longer to devote herself exclusively to the one product, coffee; and to replace her former policy of maintaining coffee prices by a new policy of free competition in world markets and of increasing home consumption to the maximum, so that only so much need be exported as will secure the foreign exchange needed for the payment of the external debt.

Coffee market.

On December 31, 1938 the first year of the new system of free competition came to an end, and the export figures for 1938 have been very much as expected. As the following figures show exports reached the highest figure for the last five years:—

1934	14,146,879	sacks of 60	kilogrammes
1935	15,328,791	» 60	»
1936	14,185,506	» 60	»
1937	12,122,809	» 60	»
1938	17,208,088	» 60	»

Of the last ten years only 1931 was able to show higher exports than 1938, 17,850,872 sacks having been exported in that year. The 1938 figure would also certainly have exceeded the 1931 figure, had it not been for two factors, one of which tended to lower the 1938 figure, the other to raise the 1931 figure. In 1938 U. S. A. dealers, not wishing to end the year with large stocks, reduced their purchases in November and December; whilst in 1931 an agreement between the *Conselho Nacional do Café* and the "Grain Stabilisation Board" arranged exchanges of North American wheat against Brazilian coffee, which naturally increased the exports of the latter product considerably.

The policy of free competition on world markets, which has resulted in the selling of coffee at lower prices, has not, however, had any unfavourable effect on the trade balance, because the lower level of prices has been compensated by the greater volume of sales. In 1938 5 million more sacks were sold than in 1937 instead of being burnt, and these 5 million sacks gave work to both the land and sea transport services, paid taxes, earned commissions, and helped towards the regaining of markets lost by the previous policy of high prices.

Cotton market.

The second place in Brazil's agricultural is now occupied by cotton. The last crop may be reckoned at 433,500 tons, of which 200,000 were produced in the State of São Paulo, 130,000 tons in the cotton states of the north, and the remainder in the southern states other than São Paulo.

For the first two months of the present year prices have remained at the average level of last year, that is to say varying from 45 to 50 milreis per arroba. These prices are low for the world market, but they are remunerative for Brazil where the costs of cultivation and of harvesting are low.

Being closely bound to the world market Brazil is affected by the great U. S. A. market. The restriction of sales in the Brazilian market, although less pronounced than in the U. S. A., has been rendered inevitable by the situation of the world cotton market. The great stocks of cotton accumulated in the U. S. A. have their effects also on Brazil. However sales have been increased to 280,000 tons, the principal buyer being Germany with 80,000 tons, then Japan with 60,000 tons, Britain with about 40,000 tons and France with 28,000 tons, the remainder having been taken by other European countries. These exports had a value of £ 14,000,000.

The increasing importance of cotton in the Brazilian economy has also been the cause of the extension of the cotton area in São Paulo State. In that State the new movement towards polyculture was specially necessary, as previously the production of coffee had absorbed almost all its energies. At present, as we have seen, it is the main area for cotton production and cotton export, almost all of the German purchases

of cotton being from São Paulo State. Whereas in 1933 it only exported 50,000 tons, in the succeeding years the cotton exports of São Paulo have been as follows:—

1934	62,670 tons
1935	56,911 »
1936	132,424 »
1937	152,323 »
1938	200,000 »

The value of the exports in this last year amounted to about 700,000 contos, so that if to this are added the 140,000 contos from the by-products of cotton (oil-cakes, seed and other residues) a total of about £ 10,000,000 is obtained. This figure for the cotton exports of the State of São Paulo represents 71.43 per cent. of the total value of Brazil's cotton exports in 1938, which was about £ 14,000,000.

Sugar market.

On December 31, 1938, the production of refined sugar for the season 1938-39 reached 9,265,365 sacks, which was the highest production for the last four years, as the following statistics of production show:—

1935-36	9,150,648 sacks of 60 kilogrammes
1936-37	8,710,320 » 60 »
1937-38	9,247,115 » 60 »
1938-39	9,265,365 » 60 »

The situation in the six sugar-producing States in 1938-39 has been as follows:—

Pernambuco has produced 2,869,419 sacks, which was more than in the two previous seasons when production amounted to 1,817,651 and 2,229,113 sacks respectively. This abundant production was due to the excellent atmospheric conditions which were very favourable for the cane.

Alagoas has produced 790,207 sacks, and thus exceeds the productions of 1936-1937 and 1937-38 which were 515,340 and 603,163 sacks respectively. The high production was due to the same causes as in Pernambuco.

Sergipe has a lower production than in previous years—only 357,616 sacks as against 447,825 and 437,302 sacks in 1936-37 and 1937-38 respectively. The decrease was due to a reduction in the area cultivated and also to the bad atmospheric conditions.

Bahia showed a decline in production, for the same reasons as Sergipe, from 451,265 and 487,888 sacks in 1936-37 and 1937-38 respectively to 384,201 sacks in the current season.

Rio de Janeiro and *São Paulo* are the most important sugar-producing states of the south, production being so great that restrictive measures have become necessary. For Rio the quota was fixed at 2,016,916 sacks and the actual production was 1,977,780 sacks, but this slight deficit of 41,136 sacks does not suffice to alter the situation. For São Paulo the quota as fixed by law was 2,073,241 sacks, but it was exceeded by 124,596 sacks as production was 2,197,837 sacks. São Paulo is the second sugar-producing state of Brazil and would be the first, were it not for the restrictions on production imposed by law. These figures show the success of the new movement towards polyculture, for São Paulo used to produce almost nothing but coffee, whereas now it adds to the national wealth by its production of sugar and cotton.

The Institute of Alcohol and of Sugar, which controls the production and consumption of the latter commodity, has succeeded in stabilising prices, which now fluctuate round 45 milreis per sack of 60 kilogrammes. To achieve this result, the Institute each

year fixes the area which must be cultivated in order to satisfy the demands of consumers; if there are surpluses it has a special scheme for dealing with them, putting aside a part for the years of low production and disposing of the remainder in foreign markets.

Fruit market.

The great improvement in methods of cultivation and the winning of new markets has resulted in an extension of fruit production within recent years, and now a part of the production is exported.

Citrus fruits. — The official production figures of these fruits show the growth of production and exports from 1932 to 1937-38:—

	Production (Tons)	Exports (Barrels)	Exports (Contos)
1932-33	700,000	2,544,258	54,894
1937-38	1,480,000	4,970,858	123,858

Methods of production are becoming ever more intensive, the area of cultivation is extending, the different varieties are being subject to selection and at the same time the greatest care is being devoted to the transport of the product. A refrigerator of great capacity has been set up in the port of Santos, and the ships which transport the product have been supplied with the most up-to-date refrigerating plant. In 1938 the United Kingdom took about 51 per cent. of the citrus fruits exported from Brazil (as against 23 per cent. of those from Argentina).

Bananas. — The cultivation of bananas is making as much progress as that of the citrus fruits. The statistics are as follows:—

	Production (Tons)	Exports (Tons)	Exports (Contos)
1932-33	908,000	157,000	98,000
1937-38	1,517,000	225,000	150,000

Among the purchasers of Brazilian bananas the Argentine occupies first place, taking 74 per cent. of Brazil's exports, followed by the United Kingdom with 17 per cent. and Uruguay with 7 per cent. Since the banana is a very perishable commodity exports on a large scale are hardly possible without the use of the most modern refrigeration plant.

Wheat market.

Brazil imports the wheat and flour needed for home consumption, but has recently started a campaign to decrease these imports as much as possible. Wheat imports now represent about 20 per cent. of total imports.

Last season's harvest, which was about 1,700,000 quintals, only covers 15 per cent. of consumption requirements, and it will be necessary again to import the usual quantity of 10 million quintals in order to have the 12 million quintals needed to satisfy consumption requirements.

Agricultural credit.

On December 23, 1938 three important Decree-laws, Nos. 1001, 1002 and 1003, were issued regulating agricultural debts. The importance of these Decrees is not, however, merely economic and does not lie only in the high amount of these debts, but is also juridical, because they depart from legal principles till now in force in almost all countries.

Decree-law No. 1,001 prolongs the moratorium on agricultural debts established in 1937 till December 31, 1939, and clearly defines the class of agriculturalist able to benefit from this Decree. To counter-balance the effects of the moratorium on payments, Decree-law No. 1,002 authorises the Bank of Brazil to issue mortgage bills at 5 per cent., negotiable on stock exchanges, so that it may obtain the funds to grant loans with mortgage guarantee to agriculturalists in order that the latter may be able to pay their debts contracted previous to 1937. Debtors will be entitled to loans up to 75 per cent. of the total of their previous debts.

The third Decree-law, No. 1,003, enables the Bank of Brazil to grant certain advantages in respect of agricultural mortgages and to protect the mortgaged property of agriculturalists.

FRANCE

Since the beginning of December 1938 the position of the franc has improved, not only in relation to sterling, but also in relation to the dollar and to gold.

At the beginning of January 1939 the Bank of France was able to lower its discount rate from 2 $\frac{1}{2}$ to 2 per cent.

The tendency for the internal price level to rise persisted up to February 1939, since when, however, prices have slightly weakened. Thus the weighted general index of the wholesale prices of 126 commodities prepared by the *Statistique Générale de la France* (base 1913 = 100) rose by stages from 664 at the end of October 1938 to 689 at the end of January 1939, then falling slightly to 683 by the end of March. Yet despite this slight improvement of the franc in relation to foreign currencies and this slow but steady rise of internal prices the difference between French prices and foreign prices remained sufficient to stimulate exports so that these have shown a favorable tendency. This stimulating action, however, favours industry rather than agriculture, because French agriculture in general is not for export. Nevertheless, French agriculture is in a good position in spite of various signs that the risks of over-production may become serious.

It is indeed clear that the cereal harvests were very good. Wine production in the metropolitan area nearly reached 58 million hectolitres as against 51 millions in 1937. Taking account of the Algerian production and of the accumulated stocks the total quantity of wine for marketing exceeds 87 million hectolitres, to which must further be added the imports coming from Tunisia, that is to say about 1 million hectolitres. Among the chief agricultural products sugar beet is the only one of which the production showed a decline in 1938 as compared to 1937. The frosts of December 1938 destroyed some of the wheat in the ground. The health of the livestock has improved, and foot and mouth disease is clearly on the decline.

Yet in spite of this abundant production, the prices of the main agricultural products have remained very firm. The weighted index of the prices of 39 agricultural products and foodstuffs calculated by the *Statistique Générale de la France* (base 1913 = 100) was 688 at the end of January 1939 as against 634 at the end of January 1938 and 646 at the end of October 1938. Admittedly, at the end of March there was a weakening to 671, but even so the index was above the March 1938 figure of 620. The index of the prices of the 24 products of vegetable origin only rose slightly from 628 at the the end of October 1938 to 635 at the end of November, and more noticeably to 656 at the end of December 1938 and to 668 at the end of January 1939. By the end of March it had weakened to 660.

Wheat prices, which are rigidly fixed by the Wheat Office, now show only a steady rise throughout the season. In comparison to the previous season wholesale prices of wheat showed a rise, but owing to the incidence of various taxes the prices actually received by the producer have fallen. As regards the secondary cereals, they continued to fall except in December 1938 and January 1939, when they recovered somewhat. Maize prices also showed an upward trend, but this is mainly an imported commodity. Wine prices after having slightly weakened in January 1939 recovered in February, whilst in March they kept almost steady. Sugar prices are rising owing to insufficient production. The price index of animal products rose sharply from 675 at the end of October 1938 to 706 at the end of November. The rise from 706 in November to 729 in December 1938 must be considered as mainly a seasonal phenomenon—even though the index for December 1937 was only 671. This index was very much affected by the prices of the milk products which have risen considerably because of the lessened milk production resulting from the intense cold. It slightly weakened to 721 at the end of January 1939, fell back to 683 for the end of February, but then rose a little in March to settle down at 690 at the end of the month. March also saw quite a noticeable recovery in meat prices.

Commercial policy.

France has concluded a new agreement with Norway. Her commercial treaty with Siam, signed on December 7, 1937, entered into force on March 7, 1939; it contains the most favoured nation clause ⁽¹⁾. The commercial treaty between France and the U. S. S. R. has been prolonged till December 31, 1939 ⁽²⁾, and the commercial agreement between France and Venezuela has been renewed.

On December 6, 1938 France concluded an agreement on commercial payments with Bulgaria to replace that of July 6, 1936. This new agreement entered into force on January 1, 1939. It can be denounced at any time on the giving of three months notice.

The list of goods of Bulgarian origin which were and continue to be admitted at the minimum tariff rate, as stipulated in the Franco-Bulgarian Convention of October 22, 1925, was completed by a Decree of January 17, 1939 ⁽³⁾. Of the products of interest to this report the original list included cereals, brans, cheeses, the oil-yielding crops and oil-cakes. The recent decree has added wheat, spelt and maslin flours meat and butter.

For some years the trade between France and Yugoslavia has been declining to such an extent that in 1938 France's share in the foreign trade of Yugoslavia was only 2 per cent., her purchases in Yugoslavia in that year having only amounted to 100 million francs with her sales at a correspondingly low level. Yugoslavia indeed owing to transfer difficulties had to adopt severe measures of exchange control, and does not import from any country more than she exports to it. Thus it was that in 1938 owing to lack of means of payment she had considerably to reduce her purchases of French goods. But the increase of Yugoslav imports into France meets with the fundamental difficulty that Yugoslav prices are in general higher than French ones.

France has negotiated a commercial treaty with Yugoslavia which was concluded on February 11, 1939, and the French government has taken the necessary steps by the Decrees of March 31, 1939 for the putting into effect of this agreement ⁽⁴⁾.

⁽¹⁾ *Journal Officiel*, March 7, 1939. — ⁽²⁾ *Journal Officiel*, December 31, 1939. — ⁽³⁾ *Journal Officiel*, January 18, 1939. — ⁽⁴⁾ *Journal Officiel*, April 1, 1939.

The terms of this agreement should allow of a considerable increase in the trade between France and Yugoslavia. By opening wider the doors of the French market to Yugoslav products exports of French goods to Yugoslavia should be increased, and at the same time the transfer of French financial credits in Yugoslavia should be rendered easier. To close the gap between French and Yugoslav prices France grants to Yugoslavia the tariff rebates determined on at the Stresa Conference. These rebates, the value of which does not exceed 8 million francs, have the sole aim of facilitating the more complete utilization of the quotas granted to Yugoslavia.

The imports of salted pork of Yugoslav origin will be exempted from the special quota tax up to a limit of 1000 quintals. A special system has been set up to facilitate the export of quotas of maize by Yugoslavia, a system which has also been extended to some other Danubian countries. All these measures are so framed as not in any way to infringe the protection accorded to the agriculture of France or her colonies ⁽¹⁾.

At the same time efforts will be made systematically to increase French purchases in Yugoslavia by means of a better organisation of the contacts between the two markets, a task to which the Franco-Yugoslav chamber of agriculture and chamber of commerce will especially devote themselves.

On their importation into France young wethers and ewes of Yugoslav origin, as also the fresh and the frozen meat of such young animals, will be subjected without any reduction to the duties of the French minimum tariff. However, where such animals result from a crossing with breeding animals imported from France and entered in the pedigree stock-books a rebate will be granted equal to the difference between the normal duty of the minimum tariff and the duty of 102.50 francs per 100 kilogrammes within the limit of the quota available for Yugoslavia. Whilst as regards the imports of fresh, chilled and frozen meat of young wethers and ewes resulting from a crossing with breeding animals imported from France and entered in the pedigree stock-books, a rebate will be granted equal to the difference between the normal duty of the minimum tariff and the duty of 138.40 francs per 100 kilogrammes. These clauses relating to young wethers and ewes resulting from a crossing with breeding animals imported from France and to fresh, chilled and frozen meat derived from such animals are identical with those to be found in the agreement of December 13, 1937 between France and Poland. Also the recent exchange of letters of March 31, 1939 between France and Romania ⁽²⁾ contains similar clauses as too does the agreement of February 4, 1939 between France and Hungary ⁽³⁾.

France has concluded an agreement on commercial payments with Yugoslavia ⁽⁴⁾, this agreement to replace the similar agreement of December 14, 1937 and to enter into force on March 1, 1939.

By the terms of this agreement the Yugoslav Government promises to grant without delay and not subject to any restrictions the permits necessary for the import and for the making of payment for the goods of French origin figuring on the list of goods subject to import control in Yugoslavia, this promise to hold good as long as the value of French (including Algerian) sales in Yugoslavia does not exceed 60 per cent. of the value of Yugoslav sales in France. In the month following on each quarter the balance of trade between the two countries will be examined, for which purpose the statistics used will be those of Yugoslav imports on the one side and French and Algerian imports on the other, account being taken of the exchange fluctuations which have taken place in the

⁽¹⁾ For the colonies see the Chronicle on the French colonies. — ⁽²⁾ *Journal Officiel*, April 26, 1938. — ⁽³⁾ *Journal Officiel*, April 30, 1938. — ⁽⁴⁾ *Journal Officiel*, March 3, 1939.

period. A mixed committee of French and Yugoslav civil servants will be appointed to see to the good working of the payments agreement and to devise all possible measures for the furthering of commercial relations between the two countries, whilst at the same time seeing that the agreed proportions are maintained. In principle this committee is to meet every six months and whenever else the two governments think necessary.

France has also concluded a commercial agreement with Sweden, to regulate the commercial relations between the two countries for 1939. The concessions granted to France for the year 1938 by the previous agreement will be maintained and on certain matters extended, in particular as regards the export of wines and liqueurs.

France has also concluded payments agreements with Poland and Romania.

The agreement with Poland, concluded on March 27, 1939, entered into force on April 1 ⁽¹⁾. In principle it is valid for the year 1939, but may, however, be denounced during the course of the year on the giving of fifteen days' notice. The total value of the French imports into Poland effected according to the terms of the trade agreements between the two countries, is fixed at 80 per cent. of the total of Polish exports to France as calculated from the Polish export statistics. The effective maintenance of this relationship will be assured by a special committee composed of delegates of the two governments which will decide on the adjustments to be made each three months from the experience obtained in the preceding three months.

The agreement with Romania concluded on March 31, 1939 entered into force on April 8 ⁽²⁾ to replace the agreement on commercial payments of March 8, 1938. It can be denounced on the giving of three months' notice. Commercial payments will be made in free exchange. As from the date of the entry into force of this agreement all sums paid by French importers in settlement of the purchase of goods of Romanian origin to France immediately on receipt will be placed in a French franc account at the National Bank of Romania. As regards the import into France of certain goods of Romanian origin listed in an annex to the agreement, the parties will have the right to arrange compensation dealings against the imports of certain specified French goods into Romania. Both these lists of goods are subject to modification, but that of the Romanian goods imported into France includes the following among the products of interest to this Chronicle:— rye, brewers' malt, gluten, food pastes and meals, live sheep, meats, dead poultry, dead game, the skins and furs of many domestic and wild animals, butter, margarine, edible animal fats, cheeses, many vegetable oils, sugar and molasses, wines, table grapes and fruits.

Romanian exporters will have to cede to the National Bank of Romania a percentage varying according to the commodity exported of the foreign exchange due to them in settlement of the price of the goods imported into France under this system. These percentages are as follows:— 40 per cent. for rye; 30 per cent. for all animal skins and furs except those from hares, rabbits and cats; 25 per cent. for molasses; 20 to 25 per cent. for vegetable oils; 15 per cent. for brewer's malt, food pastes and meals; 10 per cent. for gluten, live animals, meats, margarine, fats, cheeses, sugar, table grapes and fruits. The sums representing the price of goods after deduction of these percentages may be freely transferred to third parties by the exporters concerned at any rate agreed upon by the buyer and the seller. They can only be used, however, in settlement of the purchase of goods of French origin imported into Romania after the entry into force of this agreement. Other commercial payments made by French importers will be placed by the National Bank of Romania to different accounts;

(1) *Journal Officiel*, April 1, 1939. — (2) *Journal Officiel*, April, 7, 1939.

but except for those made in settlement of the purchase of petrol 20 per cent. will be left at the disposal of the Romanian exporters so that they may be able to cede them freely to third parties.

Wheat market.

The Working of the Wheat Office. — The working of the Wheat Office was made easier during the first two years of its existence by the fact that the successive harvests of 1936 and 1937 were very moderate, so that the problem of disposal of excess supplies was not in fact raised during this period.

In the season which began in the summer of 1938 the Office was for the first time faced with the problem of an excess supply. This supply indeed appears even to have exceeded the estimates made by the Office in the summer of 1938 and reproduced in our Bulletin of September, 1938. Hence arose certain difficulties for the financial stability of the Office.

As the Treasury had to make an advance to the Office, the central committee of the Office could not do other than maintain the increase of 50 per cent. on the exceptional tax for the reabsorption of excess supplies which is levied on wheat producers ⁽¹⁾ The base rate of this tax, it may be remembered, had been originally fixed at 12 francs the quintal; with the increase the present base rate is thus 18 francs. Furthermore, it must be remembered that this tax is progressive.

However, the council has reserved to itself the right to restore a part of the tax to the producers at the end of the season if the financial situation of the Office then permits of such a course.

It is to be foreseen that in the coming summer, as a result of the frosts of December 1938, the Office will have to deal with a much smaller harvest than last year.

It was desired to facilitate the resowing of the lands in cases where these frosts had wrought much havoc. The farmers who will be able to show that, between the date of the frosts and April 20, 1939, they purchased seed wheat for purposes of resowing from co-operatives or dealers allowed to effect such sales will be granted exemption, on an amount not exceeding the quantity of wheat thus purchased, from the exceptional reabsorption tax of which we have already made mention ⁽²⁾.

As regards the allocation of quotas for wheat sales in order thus indirectly to limit production ⁽³⁾, this will not be carried out for the season 1938-39.

Attempts have been made to increase the consumption of wheat. The coefficient of extraction has been fixed at 2 points below the specific average weight of the wheats to be ground in each mill. This measure will make it possible at one and the same time to increase the quantity of wheat ground by the mills and to improve the quality of the flours without, however, provoking a rise in flour prices.

Under the auspices of the Wheat Office a national propaganda committee has been set up in order to increase the consumption of bread.

The professional organisation of the milling industry is in close contact with the Wheat Office, with the object of equalising the working capacity of the mills and the production of wheat. Membership of the organisation of the milling industry is open to all individuals, firms or cooperatives in France working at the production of wheat flours destined for human consumption and accepting the statutes of the orga-

⁽¹⁾ See the Chronicle for France in the September, 1938 number of this *Bulletin*. — ⁽²⁾ *Journal Officiel*, March 7, 1939. ⁽³⁾ See the Chronicle for France in the December 1938 number of this *Bulletin*.

nisation. It is governed by an administrative council and includes departmental and regional committees. The statutes were approved by decree on February 10, 1939 ⁽¹⁾.

Imports from foreign countries. — It is well known that France generally imports from foreign countries only hard wheats and seed wheats.

Permits to import hard wheat from abroad are only granted on payment of 16 francs per quintal imported to the Wheat Office ⁽²⁾.

Seed wheat imported before April 15, 1939 will be exempted from customs duty and from all taxes levied for the profit of the Wheat Office ⁽³⁾. The purpose of this exemption is to facilitate the resowing of the wheat lands affected by the frosts of December 1938.

Barley market.

The quota of barley for brewing has been reduced to 5,000 quintals for the first quarter of 1939 ⁽⁴⁾.

Meat market.

The bounty on the export of fat salted pork and on salted streaky and middle cuts has been fixed at 1 franc per kilogramme ⁽⁵⁾.

Sugar market.

The Government has been concerned about the possible effects on the national economy and on the feeding of the people of the deficiency in the sugar production of the current season. It has, therefore, by four successive decrees authorised the importation of four quotas of sugar, of which the first, of 10,000 tons, was the same as for 1938, whilst of the three supplementary quotas one is of 20,000 tons and the two latest are of 15,000 tons each. The licence tax for foreign sugars, which was 22 francs in 1938, will be 20 francs till May 31, 1939 and 28 francs after that date. As regards imports made up till and including June 15, 1939, payment of the licence tax will entitle importers to a transferable delivery receipt. In order to facilitate the accumulation of stocks in the Paris area a repayment of 20 francs per quintal of sugar subjected to the tax will be made to the holders of such receipts who can show that they have placed in entrepôt in Paris and delivered to the regulated market an amount of sugar equivalent to that for which they have receipts ⁽⁶⁾. In order to encourage subsequent exports, rebates have also been provided for the holders of such receipts who signed obligations for the temporary admission of foreign sugars ⁽⁷⁾.

Wine market.

The interministerial commission for viticulture has decided on 8 million hectolitres as the quantity of wine which must be reabsorbed in order to establish equilibrium between the quantity of wine on the market and the demand for that wine. 6.5 million hectolitres it was decided should be reabsorbed by distillation, whilst the remaining 1.5 million hectolitres are to be held back from the market.

⁽¹⁾ *Journal Officiel*, February 16, 1939. — ⁽²⁾ *Journal Officiel*, December 28, 1939. — ⁽³⁾ *Journal Officiel*, March 7, 1939. — ⁽⁴⁾ *Journal Officiel*, January 1, 1939. — ⁽⁵⁾ *Journal Officiel*, February 14, 1939. — ⁽⁶⁾ *Journal Officiel*, April 16, 1939. — ⁽⁷⁾ *Journal Officiel*, April 2, 1939.

Sanitary prohibitions.

In order to protect the livestock of the metropolitan area against epidemics and to prevent the import of foodstuffs from unhealthy stock or from stock suspected of disease, the Government has been authorised to prohibit the import of all animals, wild or domestic, which show signs of contagious disease, of all animals, live or dead, which are unhealthy or suspected of disease, and of all products of animal origin, fresh or preserved, which are diseased or suspected of disease ⁽¹⁾.

The import and transit of all cattle, sheep and goats from Switzerland has been prohibited ⁽²⁾.

The prohibition of the import and transit of rodents and their skins coming from Hungary, Romania and Yugoslavia has been suspended ⁽³⁾.

Agricultural credits.

The budget for the financial year 1939 ⁽⁴⁾ provides that the total of the advances which may be allowed by the State to the National Agricultural Credit Bank shall be increased from 700 to 800 million francs.

FRENCH COLONIES, PROTECTORATES AND MANDATES

Some of France's commercial agreements are extended also to her colonies.

For example, the trade agreement which France concluded with Bulgaria on October 22, 1925, as also the agreement on commercial payments which she concluded with the same country on December 6, 1938 and to which we refer in the Chronicle for France ⁽⁵⁾, apply also to France's colonies, protectorates and mandates. Henceforth, products from the French colonies will be assimilated to those coming from France itself, and will therefore receive most-favoured-nation treatment in Bulgaria.

On the other hand, the payments agreement between France and Romania only applies to the metropolitan country and to North Africa ⁽⁶⁾.

Some of the trade agreements recently concluded by France contain special clauses in favour of the products of colonial agriculture. For example, the special concessions granted to facilitate the importation into France of Yugoslav, Bulgarian and Romanian maize nevertheless safeguard the interests of colonial producers. The quotas of maize imported into France from Yugoslavia, Bulgaria and Romania will not be admitted duty-free except when balanced by exports of maize from the French colonies to foreign markets. Thus the maize of the French colonies which can no longer be sold on the home market will be disposed of in foreign markets.

The traditional tariff system of the colonies—one of more or less complete assimilation between colonies and mother country—in principle afforded protection for the same products and to the same extent in the colonies as in the mother country. The result of this policy has been chiefly to encourage the production of just those commodities which undoubtedly compete with those of the mother country. French policy has, however, recently changed, and the guiding principles of her commercial and co-

⁽¹⁾ *Journal Officiel*, January 1, 1939. — ⁽²⁾ *Journal Officiel*, December 10, 1938. — ⁽³⁾ *Journal Officiel*, December 27, 1938. — ⁽⁴⁾ *Journal Officiel*, January 1, 1939. — ⁽⁵⁾ *Journal Officiel*, January 17, 1939. — ⁽⁶⁾ *Journal Officiel*, April 7, 1939.

lonial policy are showing greater flexibility. On the one hand the Government has been led by the pressure of circumstances to take defensive measures against colonial agriculture itself, and on the other hand it is trying to direct colonial agriculture towards products which supplement home agriculture. The sugar producers of the home country and of the colonies have divided the home and the Algerian markets between themselves by agreements which have been officially approved by the Government. A similar agreement has been concluded between the representatives of the oil industries of France itself and of French West Africa, which agreement has been sanctioned by a Decree of April 8, 1938. A committee of semolina producers composed of an equal number of representatives of the home and of the Algerian manufacturers regulates the competition between the home and the Algerian semolina industries. The Government obliges the home industry to use a certain percentage of hard wheat from North Africa, and as this type of wheat is hardly cultivated at all in France the product thus aided is supplementary to French products. French barleys are in little demand for brewing purposes; therefore in order to stimulate the production of malting barley in Morocco this territory has been allocated certain quotas for the import of such barley into France and Algeria free of duty. Efforts have been made to improve the quality and enhance the reputation of the tea from Indo-China. Similarly attempts have been made to develop cotton production in Algeria, in West Africa and in Equatorial Africa, and to stimulate the production of jute and of its substitute, sisal. Bounties on the production of bananas, coffee and rubber have already given excellent results.

The *Conseil National Economique* has recently drawn up a general plan to be carried out over a period of several years for the development of French imperial production. The aim is to replace in the colonies the production of goods which compete with home products by the production of goods which France now has to buy abroad — certain raw materials for industry such as textile materials, fats and woods and certain tropical products such as coffee, tea and exotic fruits. The principal method to this end will be a system of subsidies, which will be financed in the first place by taxes accepted by the producers; but if the producers cannot come to an agreement among themselves or if their contribution proves insufficient, recourse will be had to customs and to export duties. For each main branch of production the *Conseil National Economique* proposes the setting-up of a general committee of producers and traders, composed of delegates from the trade organisations representing the interests of home and of colonial agriculture, of commerce and of the consuming industries, and including an effective representation of the various government departments concerned. All these committees will have a similar constitution and organisation, to be approved by the State.

The report of the *Conseil National Economique* suggests that it would be possible to develop cotton production, especially in North Africa, in West Africa, and in Equatorial Africa, and therefore proposes the granting of bounties on cotton production in those colonies. As regards the oil-yielding crops, it commends the development of the production of linseed in Morocco, not by means of financial support, however, but rather by the aid of the agricultural services; and similarly for Tung oil. As regards ground-nuts the report suggests that efforts be made to improve the selection and to reduce the cost of transport. It also recommends the development of orange and mandarine production. Further, the report deals with the development of the colonial forests, from which the home country already draws a very large part of the wood imported for building purposes and for cabinet-making; and here it chiefly recommends the improvement of transport conditions and the reduction of freight rates, especially for sawn and peeled woods, whilst also suggesting a "users preference" for French and colonial woods.

North Africa.

The economic situation of North Africa is steadily improving. The exports from Morocco of cereals, wines, early fruits and vegetables, and sheep are increasing. However, the exports of agricultural products from Morocco to France and Algeria show a very noticeable decrease, the "open door" policy which applies to Morocco as to the mandated territories naturally favouring trade with foreign countries; Moroccan exports to Germany, mainly of raw materials, have especially increased of late.

Wheat market. — It will be remembered that the various taxes on wheat producers apply to Algeria as well as to the home country.

The measures dealing with the coefficient of extraction of flour, referred to in the Chronicle for France, are similarly applicable also to Algeria.

The minimum percentage of hard wheat from North Africa which the industries of the home country are obliged to use in the production of food pastes, semolina and similar products has been fixed at 80 per cent. as from February 20, 1939 ⁽¹⁾ and at 95 per cent. as from April 1 ⁽²⁾.

Export of cattle from Morocco. — The home country has allowed the import into France and Algeria ⁽³⁾ of a supplementary quota of 7,000 cattle from the French zone of Morocco.

Wine market. — The measures for the holding back and the distillation of wine mentioned in the Chronicle for France apply also to Algeria. Similar measures have been taken in Morocco.

Farm leases and mortgage interest rates. — During the depression in the summer of 1935, decree-laws to decrease agricultural costs had reduced ground rents and the interest charges on mortgage debts by 10 per cent., these measures applying to Tunis as well as to France. Since then the position of the agricultural classes has radically changed, so that these decrees for reducing ground rents and mortgage debts have been abrogated in Tunis as they already were in France.

French West Africa and Togoland.

General price policy. — The policy of price control has been relaxed in French West Africa. Nevertheless the rule requiring the previous consent of the price control committees for rises in prices still holds for certain goods, including various foodstuffs and some commodities necessary for agricultural production such as manures, agricultural machinery and building materials ⁽⁴⁾.

Native saving societies. — In French Togoland saving societies which are quite a new feature among the natives, going back no further than 1937, have been growing rapidly. At the end of 1938 there were already nine societies with 200,000 members.

French Equatorial Africa and the Cameroons.

Customs tariff. — The rates of the customs duties levied on foreign goods entering that part of Gabon which is not included within the Conventional Basin of the Congo have been raised by 7 per cent. ⁽⁵⁾.

⁽¹⁾ *Journal Officiel*, February 17, 1939. — ⁽²⁾ *Journal Officiel*, March 29, 1939. — ⁽³⁾ *Journal Officiel*, February 7, 1939. — ⁽⁴⁾ *Journal Officiel de l'Afrique occidentale française*, January 7, 1939. — ⁽⁵⁾ *Journal Officiel*, January 29, 1939.

Improvement of cultivation. — A Decree of January 17, 1939 ⁽¹⁾ authorises the French Commissioner for the Cameroons to take all measures necessary for the improvement and the protection of crops and live stock in the territories under his authority.

Madagascar.

The colony of Madagascar is henceforth to be self-sufficing as regards the production of sugar. The sugar producers of Madagascar were parties to the agreement of March 1938 concluded between the sugar-producers of the home country and of the French colonies. By this agreement the sugar producers of the home country and of the other colonies had promised not to encroach upon the home market of Madagascar, which was furthermore granted export quotas to the home country and to Algeria. In addition, as from the end of 1938 the importation into Madagascar of sugar of foreign origin was to be prohibited ⁽²⁾.

The cultivation of coffee is developing rapidly in the island. In recent years many coffee trees have been planted, and the area actually yielding coffee rose from about 84,000 hectares in 1937 to about 90,000 hectares in 1938. Rice cultivation is also progressing, and in order to aid this development great irrigation works are being carried out. Rice exports from Madagascar have been increasing and imports falling off; the exports mainly go to France and consist of superior quality rice for human consumption.

Indo-China.

The year 1938 has ended in Indo-China with economic and financial conditions generally very favourable.

The total exports of Indo-China for 1938 exceeded 60,000 tons, as against 45,000 tons in 1937. In 1938 in the single month of December, always a good month for exports, these exceeded 10,000 tons.

The index of wholesale prices of the products of the colony (base 1925 = 100) fell in the later months of 1938, from 106 in September to 98 in December; whilst the general index of wholesale prices (also base 1925 = 100) fell from 121 to 117 over the same period.

However, the only real cause for anxiety at the end of the year lay in the reduction of rice exports and the recent fall in prices of this cereal, which began in October 1938 and became more rapid in November and December. Prices of rice No. 1 at Saigon had fallen by 30 per cent. by December 31, 1938 as compared with those prevailing at the end of September; and between the end of October and the end of December paddy prices weakened by 40 per cent. Maize prices have kept much firmer, having been 8.1 piastres the quintal in October 1938, weakening to 7.8 piastres in November, and recovering to 8.5 in December.

Trade Agreement with Siam. — France has concluded a commercial agreement with Siam regarding Indo-China. This agreement is for a period of five years, renewable by tacit consent.

Rubber. — A Decree of January 18, 1939 ⁽³⁾ provides for the application to French Indo-China of the new rules recommended by the International Committee for Rubber Control in its resolution of March 29, 1938.

⁽¹⁾ *Journal Officiel*, January 25, 1939. — ⁽²⁾ *Journal Officiel*, December 27, 1938. — ⁽³⁾ *Journal Officiel*, January 21, 1939.

Consequently the area of rubber plantations in Indo-China by December 31, 1930 must not exceed by more than 5 per cent. the area already planted. The poor qualities of rubber used to be taxed on export from Indo-China as heavily as the rubber of higher value; hence in order to apply the tax on rubber exports more fairly the tax on the poor qualities has been reduced by 4 per cent. (1).

Land system. — The Decree of July 21, 1925 effected the unification of the legal status of immovable property in Cochinchina as well as the adoption of the principle of the land register. The Decree provided for the progressive application of the new legislation to all the territories of the Indo-Chinese Federation; this has already taken effect in the French territories of Tourane, Hanoi and Haiphong. The work of surveying is already well advanced, and hence it was thought that the time had come for the application of the land legislation to the whole territory of Tonkin. In that territory landed property was governed by legislation which varied according to the personal status of the holder of the property right, which was not a convenient system. On March 29, 1939 a Decree (2) was issued to apply to immovable property lying within the protected territory of Tonkin and subject to French law. At the same time a legislative act of the protected sovereign applies the same rules to immovable property subject to Annamite law. This simultaneous promulgation of the two texts makes possible in Tonkin, as in Cochinchina, the attainment of a unified legal system for immovable property. Nevertheless Succession is still governed, even as regards immovable property, by the legal status of the individuals concerned, both as regards the form and the object of wills and the status of the heirs and legatees and as regards the devolution of goods and the method of regulating division of the property. But the rights devolving to the various heirs called upon to take up a succession as regards immovable property dependent upon it can only be of the type defined in the above-mentioned texts, that is to say: property, usufruct, use and habitation, long lease, the servitudes and two sureties which creditors may possess on the immovable property of debtors, lien on immovables and mortgage.

The principle of the land register applies to the whole of Tonkin. A landed property service has been set up, responsible for keeping the registers and for carrying out the prescribed formalities for the publication of rights to real property.

(1) *Journal Officiel*, January 28, 1939. — (2) *Journal Officiel*, April 4, 1939.

AGRICULTURAL ECONOMICS AND SOCIOLOGY

1939

No. 6

WORLD SUPPLY OF FATS AND OILS ⁽¹⁾

SUMMARY: I. General tendencies of the world trade in fats, oils and oil-yielding raw materials *Developments up to 1914; developments from the War to the beginning of the World Economic Crisis; developments since the beginning of the World Economic Crisis.* — II. Vegetable oils and oil-yielding raw materials: *Volume of output; importance of different oilseeds, world distribution of production; international trade.* — III. Butter. — IV. Pig and beef fats. — V. Marine animal oils: *Production; international trade utilization of these fats and oils.* — VI. The principal importing countries of fats and oils. — VII. Utilization of fats and oils: *Developments in general; consumption of food fats; production of margarine and other artificial food fats.*

I. — General tendencies of the world trade in fats,
oils and the oil-yielding raw materials.

Developments up to 1914.

The growth of the present world market for fats, oils and the oil-yielding raw materials, which began in the middle of the last century, was due to the development of a large import area in North-West Europe. The industrial countries of Europe, in spite of increases in their own output of animal fats such as butter, lard and salted fat pork, and the expansion of their cultivation of oilseeds such as rape, flax, and poppy, became less and less able to supply their rapidly increasing requirements of fats and oils for industrial and food purposes. Up to this time international trade in fats and oils had been confined almost entirely to animal fats and olive oil; but now it began to include many different oils and oil-yielding raw materials coming from the most distant countries.

(¹) The Institute recently published a study in two volumes on the production and international trade in fats and oils. The first volume dealt with vegetable oils and fats, the second with butter, pig and beef fats, marine animal fats, the consumption of oils and fats in the importing countries of most importance for the world market, the utilization of oils and fats and the movements of prices. The two volumes appear as Nos. 4 and 5 of the series of publications on the principal agricultural products on the world market, and have appeared in French under the title: *La Production et le Commerce International des Huiles et des Graisses*, and in English under the title *Oils and Fats: Production and International Trade*.

The figures contained in this article have largely been taken from this work. For further details the reader is referred to the work itself and to the regular statistical publications of the Institute (*Monthly Crop Report and Agricultural Statistics* and the *International Yearbook of Agricultural Statistics*).

Even in the first decade of the last century England was being supplied with palm oil from West Africa, coconut oil from Ceylon and sesame and groundnut oil from India. But the supply of oils to Europe from the overseas countries only became of real importance when international trade in manufactured oils was replaced by the trade in their raw materials.

British India was the first great area to export vegetable oil-yielding raw materials such as rapeseed, linseed, sesame seed and groundnut. In the 'fifties the first supplies of copra arrived from the Malay States, East Africa, Ceylon and British India, and of groundnut and palm kernel, as well as palm oil, from West Africa.

The output of oil-yielding raw materials continued to expand both in Western Europe and overseas until about the 'eighties. A fundamental change then began. The cultivation of oilseeds in Western Europe was no longer able to meet the competition of imported oilseeds, and further, as the result of a shift in Western European agriculture to animal husbandry with a view to producing fresh milk, butter and meat, it became more profitable to cultivate root-crops and fodder than oilseeds with their falling prices. The production of oil-yielding raw materials shifted to Eastern and South-Eastern Europe, and especially overseas, which areas were economically, and perhaps climatically, more suitable for their production. The United States, soon followed by other countries, continually expanded its use of cottonseed in the production of oil, which had first been carried on on industrial scale at the end of the 'sixties. In 1867 there were only 4 cottonseed oil mills in the United States; by 1880 the figure had risen to 45, and by 1890 to 119. The output of cottonseed oil rose from 11,340 metric tons (25 million pounds) in 1874-75 to 139,250 metric tons (307 million pounds) in 1890-91 and 328,850 metric tons (725 million pounds) in 1901. Part of this output was exported, but far the greater part was manufactured into lard compound, and in this way large quantities of lard were released for export.

The rapid increase in the output of copra in the Netherlands Indies and the increased exports of groundnut from British India as a result of the cultivation of types with a high yield were also of great importance. Shortly before the turn of the century China began to export sesame seed, cottonseed, rapeseed and groundnut.

Agriculture in Western Europe shifted mainly to the production of butter, which received considerable impetus from the increasing employment of oilcake, hitherto used chiefly as a fertilizer, for fodder. Oilcake was once much more important from the point of view of nutrition than the oil obtained from it, which was used chiefly for industrial purposes. Except for olive oil, the importance of vegetable oils for food purposes declined in Western Europe, butter, lard and salted fat pork remaining the principal food fats.

Butter was produced in greatly increasing quantities, especially in North-Western Europe, while large quantities of lard and salted fat pork were supplied by the United States. Exports of butter from Denmark and the Netherlands increased from year to year. Besides butter, lard and salted fat pork, another product, margarine, was used in increasing quantities. Margarine was at first manufactured almost entirely from animal fat, of which, again, the United States was the principal supplier.

At the turn of the century this movement became more rapid. The industrial population of Europe further increased in numbers and raised its standard of living, so that the production of animal fats could not keep pace with the increasing demand. Exports of butter from Denmark, the Netherlands, and soon also from Australia and New Zealand increased still further. In Western Europe on the other hand, where pig-rearing was more and more directed to the production of meat, the output of pig fat fell off. In the United States also exports of lard had passed their maximum. Thus the margarine industry discovered market possibilities which it had before scarcely expected, and production leaped up. This was made possible chiefly through progress in the manufacture of vegetable oils, which enabled the margarine industry to use these oils in increasing quantities. The margarine industry became one of the most important consumers of vegetable fats and oils. Thus in 1913 the German and Netherlands margarine industries used about fifty per cent. vegetable fats and oils. Nevertheless vegetable oils were still mainly produced for industrial purposes.

In this period not only new areas of production but also new oil-yielding raw materials appeared on the world market. The utilization of oil plants growing wild lost importance as against their planned cultivation. Exports from China increased rapidly after the turn of the century. In 1900 Argentina appeared as another supplier of oil-yielding raw materials, and her exports of linseed soon challenged the position of Russia, who had hitherto been the chief exporter of this product. In 1908 the first supplies of soya bean reached Europe, and within a few years this became one of the most important oil-yielding raw materials on the world market.

The following figures show the expansion in the sales of oil-yielding raw materials. The import surplus of oil-yielding raw materials for the United Kingdom rose from about 770,000 metric tons in 1909 to over 1,500,000 metric tons in 1913; that of Germany from about 600,000 to more than 1,700,000 metric tons; that of France from 640,000 to about 1,000,000, and that of the Netherlands from 140,000 to about 400,000 metric tons.

Developments from the War to the beginning of the World Economic Crisis.

During the War the tendencies mentioned above were interrupted, but soon after they appeared again as strong as ever, so that within a few years the consumption of fats and oils for food purposes in different countries even exceeded the pre-War level. The increased consumption was met first by the growing production and use of vegetable oils, principally tropical, the increased output of butter and later, by the use of large quantities of whale-oil in the margarine industry.

The production of oil raw materials was expanded through more intensive cultivation and an extension of the area under oil-yielding crops in the original countries of production, the bringing into cultivation of new areas, and the cultivation of new oil-yielding raw materials. The trends of prices and output were also much affected by the great progress in the manufacture of oils, especially in hardening, through which the hard, oils, coconut and palm kernel

oil, lost their special position. For example, the progress in production and manufacture fundamentally changed the significance of groundnut oil, which had hitherto been used only in limited quantities for food purposes, and of soya bean oil, which had been used entirely for technical purposes. The margarine and artificial fat industry ultimately came to use only small quantities of fats and oils from land animals. On the other hand these industries also employed, amongst their raw materials, whale-oil, the production of which increased rapidly after the extension of whaling to the Antarctic.

The importance ultimately acquired by margarine production for the supply of food fats can be seen from the fact that in 1929 the production of margarine in Europe was estimated at over 1.1 million metric tons, compared with a butter output in Germany, which has the largest output in Europe, of 350,000 metric tons in the same year, in Denmark, the principal butter exporting country, of 179,000 metric tons, in the Netherlands of 86,000 metric tons, in Switzerland of 15,700 metric tons and in the whole of Europe (excluding Russia) of about 1.4 million metric tons.

Vegetable oils and fats had by then come to be used chiefly for purposes of nutrition; technical improvements meanwhile were enabling industry to reduce its requirements of fatty oils, and replace them by other raw materials.

TABLE I. — *The Supply of Oilcake in certain countries.*
(Thousand metric tons).

Year	United Kingdom	Germany	Denmark	France	Netherlands
Average 1909-13 . . .	1,297	1,391	(1) 680	344	—
Average 1924-28 . . .	1,415	1,160	921	(2) 411	(2) 661
1929	1,433	1,785	1,130	505	801
1930	1,224	1,511	910	404	510
1931	1,302	1,871	902	517	651
1932	1,285	2,206	639	580	573
1933	1,235	2,051	660	673	662
1934	1,456	1,581	691	633	651
1935	1,648	1,226	765	541	560
1936	1,545	1,158	863	740	578

(1) Average 1910-14. — (2) Average 1925-28.

The importance of oil-yielding raw materials for food had also increased indirectly. The use of oilcakes for fodder purposes assumed immense proportions, not least on account of the favourable relationship of their prices to those of other fodders; in fact in many countries a kilogramme of protein in oilcake cost less than half or even less than a third of that in other fodders. Without oilcake the large yields of milk and meat of the highly developed animal husbandry in Europe were now inconceivable. The increased use of oilcake for fodder affected indirectly the productiveness of the soil as a result of the increased supplies of

valuable manure, a factor the importance of which should not be underestimated; the areas using large quantities of oilcake for fodder took first place for arable farming in all countries. The strong demand for oilcake led to a temporary preference for oil-yielding raw materials leaving large residues from their manufacture. For this reason among others the soya bean, with an oil yield of 15 per cent., against copra's 60 per cent., was increasingly used.

In this period three new large consumers of oil-yielding raw materials appeared on the world market: the United States, Italy and Japan. Tropical and sub-tropical oils, as a result of their low cost of production, not only competed with olive oil on the world market, but penetrated, as in the case of Italy, into the producing areas. In the United States the use of oilcake for fodder showed a very substantial increase. Besides oil-yielding raw material Japan imported large quantities of oilcake for fertilizer from East Asia.

Developments since the beginning of the World Economic Crisis.

Thus, in every field of fat and oil production, there were great increases in output, stimulated by favourable prices and technical progress. Even without the general economic crisis a reaction was bound to follow; but, as a result of the crisis, it came in an exceptionally sharp form.

Up to 1928 fat and oil prices had been good despite the increasing supply. But in the next few years, while production continued to increase, and at a rapid rate, the fall in consumption extended further and further and included more and more countries as the crisis spread. Prices of oils and fats also started to fall, beginning with those of the products of the tropical and semi-tropical areas. As a consequence there was great competition to sell, in which tropical products and those of purely agricultural export areas were in much the stronger position; for not only did they have the advantages of greater productivity, but they also enjoyed lower labour costs per unit of production.

European agriculture, and especially that of the importing countries of the Continent, saw their herds of milch cows and pigs as well as their olive growing threatened, and they demanded protection against this overseas competition. Consequently in many countries the tariffs were raised or other measures such as the institution of quotas were taken in order to limit imports, and in 1933 and 1934 several countries proceeded to an extensive regulation of their fat and oil market.

The severe nature of the measures taken in the different countries was, however, undoubtedly due to the influence of good fodder harvests, which had affected the output of butter and pig fat very favourably. With the economic recovery and the less favourable harvests these restrictions appeared undesirably strict, and the excessive supply of previous years was followed in 1935 by a temporary shortage. Instead, however, of taking steps to increase their imports, these countries were compelled, or preferred, to use all means to increase their home output. Their aim was to be as independent as possible of foreign supplies of fats. Not only the European countries, but the United States too was unwilling to allow the continuance of the partial shift of their fat supply to im-

ports from distant countries, which had been developing in recent decades. A partial change in the direction of international trade, parallel with these attempts at greater self-sufficiency in fats and oils, took place with regard to butter, lard and other animal fats and also to vegetable oils and fats, owing to transfer difficulties and bi-lateral agreements.

The attempts to become more independent of foreign countries also extended to cover fodder supplies, so that oilcake tended to be partially replaced by home-produced fodders.

Though the shifts in the production and consumption of fats and oils have greatly influenced international trade in recent decades, they have only been able slightly to modify the highly developed international division of labour in the production of fats and oils. The increased economic activity in recent years has itself shown that while there are still many unused possibilities in most of the importing countries, the limits of self-sufficiency in fats and oils can only be extended with very great difficulty; and the prospects of international trade are much better in this field than as regards most other agricultural products.

II. — Vegetable oils and oil-yielding raw materials.

Volume of output.

The output of vegetable oil and oilcake has more than trebled since the beginning of the century and has about doubled since 1913. During the crisis production remained more or less at the same level, only the further rise being interrupted. With the economic recovery, an increase in production began in 1935 which has been maintained until now. The output of important vegetable oils covered by statistics is computed at 11.2 million metric tons for 1937, against 5.9 million for the five years 1909-1913 (see Table 2).

Importance of different oilseeds.

As Table 2 shows, the development of the output of the different oilseeds has varied greatly. Tropical and sub-tropical production shows the largest increases, and this is easily explained by the great differences in conditions of production and costs. The output of linseed, on the other hand, only rose a little, while that of rapeseed and hempseed actually fell off.

World distribution of production.

Corresponding to these movements of the different crops, the share of the separate world regions in total production has altered considerably. The following figures show the distribution of total production.

Region	Average 1909-13		Average 1935-37	
	In 1000 metric tons of oil	In per cent.	In 1000 metric tons of oil	In per cent.
Europe	691.4	11.8	1,115.7	10.7
U. S. S. R.	517.6	8.8	1,079.8	10.4
North and Central America	1,140.1	19.5	1,300.7	12.5
South America	327.5	5.6	935.3	9.0
Asia	2,437.8	41.7	4,443.2	42.7
Africa	694.4	11.9	1,392.5	13.4
Oceania	43.2	0.7	135.8	1.3
<i>Total</i>	<i>5,852.0</i>	<i>100.0</i>	<i>10,403.0</i>	<i>100.0</i>

TABLE 2. — *World Output of Vegetable Oils.* ⁽¹⁾
(Thousand metric tons)

Product	Average 1909-13	Average 1924-28	Average 1929-33	1934	1935	1936	1937
Cottonseed oil	1,292.7	1,579.6	1,558.0	1,378.0	1,637.9	1,874.2	2,335.8
Groundnut oil	750.8	1,292.1	1,618.6	1,365.1	1,551.4	1,737.4	1,925.8
Linseed oil	937.8	1,262.3	1,184.8	1,176.2	1,133.5	1,246.2	1,104.2
Olive oil	590.5	752.0	849.2	824.0	956.0	740.0	1,060.0
Coconut oil	386.2	801.4	913.7	1,018.8	1,005.7	1,029.0	1,057.2
Soyabean oil	300.0	796.0	809.5	738.0	869.3	869.8	920.0
Palm oil	267.2	454.8	529.3	599.1	716.8	845.9	845.4
Sunflower oil	170.0	502.6	591.8	606.4	574.2	586.5	591.0
Colza and rapeseed oil	579.1	453.2	467.4	451.8	485.0	501.5	495.0
Sesame oil	330.0	322.0	362.1	313.0	362.6	378.8	398.8
Castor oil	68.1	81.4	98.1	91.6	121.3	138.5	147.6
Tung oil	31.6	54.8	62.3	65.3	73.9	86.7	103.0
Hempseed oil	107.0	150.3	100.4	84.0	91.2	86.4	82.1
Perilla oil	—	3.3	8.7	15.3	35.3	62.4	47.3
Brazil nut oil	13.0	14.3	21.2	24.7	33.1	24.0	28.6
Babbassu oil	—	16.4	13.2	6.9	18.9	25.8	28.3
Mustard oil	16.0	11.7	16.6	19.2	22.2	22.5	22.5
Poppyseed oil	10.0	11.6	18.6	17.6	14.8	21.6	22.5
Shea oil	2.0	2.5	5.3	4.5	5.0	9.5	10.0
<i>Total</i>	<i>5,852.0</i>	<i>8,563.2</i>	<i>9,318.8</i>	<i>8,799.5</i>	<i>9,708.1</i>	<i>10,286.7</i>	<i>11,214.1</i>

⁽¹⁾ The volume of each of the oilseeds is converted into oil by using the coefficient of its average yield. Owing to the lack of data on production, in compiling this table the figures for exports have been used in certain cases such as China (which is particularly important, as she only exports a small part of her output of oilseeds), Brazil for castor oil, Manchukuo for perilla (exports in these two cases representing by far the larger part of output) and quite generally for palm oil and copra.

International trade in vegetable oils and oil-yielding raw materials.

Table 3 shows the export of oil-yielding raw materials and vegetable oils from the principal *exporting countries*. Nearly all the great exporting countries supply the world with a wide range of products, but nevertheless specialize on a few products which make up the bulk of their exports. The following list shows the vegetable oils chiefly exported by the more important producing areas:

<i>Netherlands Indies</i>	Copra and palm oil
<i>Argentina</i>	Linseed
<i>Manchukuo</i>	Soya bean, soya oil and groundnut
<i>Nigeria</i>	Palm oil, palm kernel and groundnut
<i>Philippines</i>	Copra and coconut oil
<i>British India</i>	Linseed, rapeseed, groundnut, sesame seed, sesame oil, castor seed, castor oil
<i>French West Africa</i>	Groundnut, palm kernel, palm oil
<i>China</i>	Tung oil, groundnut, groundnut oil, sesame oil, sesame seed, rapeseed
<i>British Malaya</i>	Copra, coconut oil, palm oil
<i>Brazil</i>	Castor seed, cottonseed, cottonseed oil, babassu, Brazil nut
<i>Belgian Congo</i>	Palm oil, palm kernel
<i>Gambia</i>	Groundnut
<i>Egypt</i>	Cottonseed, cottonseed oil.

TABLE 3. — *Principal Exporting Countries of Vegetable Oils and Oil-yielding Raw Materials* ⁽¹⁾.

(Export surplus in 1000 metric tons of oil).

	Average 1909-13	Average 1924-28	Average 1929-33	1934	1935	1936
Netherlands Indies	143.7	261.5	354.6	395.5	474.5	525.9
Argentina	199.2	476.9	485.0	433.2	580.1	479.4
Manchukuo	—	—	(2) 537.7	590.1	493.7	467.9
Nigeria	164.2	284.0	321.0	349.6	367.7	435.1
Philippines	74.9	235.8	273.8	358.6	319.2	340.1
India	452.5	394.8	379.7	306.1	157.0	299.4
French West Africa	102.2	186.6	176.0	223.1	197.8	259.1
China	273.0	537.8	495.6	184.3	273.6	233.6
British Malaya	—	52.2	67.9	89.0	120.6	111.9
Brazil	9.1	27.1	26.6	41.9	79.2	109.0
Belgian Congo	5.0	50.2	67.2	67.3	87.0	102.8
Egypt	62.4	44.5	41.1	41.1	54.2	46.7
Gambia	17.8	19.2	18.6	21.8	13.3	14.3
<i>Total</i>	1,504.0	2,571.6	3,244.8	3,101.6	3,217.9	3,425.2

(1) The figures in this table include foreign trade in the products listed in Table 2. Trade listed in the foreign trade statistics of separate countries under the heading "other" or "various oils and fats", however, is only included to the extent that further details were given. — (2) Average 1932-33.

The principal *importing areas* are, as Table 4 shows, Europe and North and Central America. In 1937 the net imports of these two regions amounted to about 3.7 million metric tons (average 1909-13 = 1.6 million metric tons), of which about 2.5 million metric tons went to Europe. Europe's own production covered only about 30 per cent. of her needs, and apart from temporary fluctuations, mainly due to the strong influence of weather conditions on the output of olive oil, this percentage has only slightly altered during recent decades, as Europe has generally been in a position to increase her production in the same ratio as her consumption. The largest net imports into Europe occurred in the last few years. In 1937 the import surplus of oil raw materials converted into oil was 2,526,000 metric tons, as against an average of 1,525,800 metric tons for the five years 1909-13. The increase of imports into Central and North America was even greater, the larger part of which, of course, went to the United States. The import surplus of North and Central America rose from an average of 37,100 metric tons for the years 1909-13 to 1,203,000 metric tons in 1937.

TABLE 4. — *Principal Importing Countries
of Vegetable Oils and Oil-yielding Raw Materials* ⁽¹⁾.

(Import surplus in 1000 metric tons of oil).

	Average 1909-13	Average 1924-28	Average 1929-33	1934	1935	1936
<i>Europe</i>						
Germany	492.2	576.1	679.4	690.9	473.2	653.2
United Kingdom	388.4	494.8	496.1	493.4	550.3	504.2
France	318.8	382.4	466.1	475.1	466.5	530.1
Netherlands	98.0	185.5	148.6	139.5	121.5	130.3
Belgium-Luxemburg	70.8	71.0	87.8	92.7	90.2	100.1
Italy	30.2	169.3	153.4	249.0	180.6	98.3
Czechoslovakia	—	38.8	68.3	89.5	86.5	94.4
Denmark	35.5	67.6	68.0	66.4	74.6	80.0
Sweden	27.9	49.2	58.2	60.5	68.1	68.7
Norway	15.0	37.8	39.3	37.4	41.2	42.3
<i>North America</i>						
United States	60.5	603.3	702.3	592.2	953.7	877.4
Canada	(— 41.6)	6.9	41.1	66.8	97.8	94.9
<i>Asia</i>						
Japan	39.2	121.1	138.0	148.5	122.3	126.6
<i>Total</i>	1,618.1	2,803.6	3,078.6	3,210.5	3,326.5	3,460.5

⁽¹⁾ The figures in this table include foreign trade in the products listed in Table 2. Trade listed in the foreign trade statistics of separate countries under the heading "other" or "various oils and fats", however, is only included to the extent that further details were given. — ⁽²⁾ Export surplus.

III. — Butter.

Table 5 shows the trend of butter production in the countries important from the standpoint of world trade. The figures given are, however, only approximate. In many countries factory production is computed fairly accurately, but the material for estimating the production on farms is everywhere rather inadequate. These difficulties lead many countries to limit their production statistics to factory output. In considering the development of this production, therefore, it should not be forgotten that there is a tendency in most countries to increase factory production at the expense of farm production. Thus an increase in the factory output cannot simply be considered equivalent to an increase in the total output of butter.

As the figures show, production has increased greatly in recent decades. From 1925 to 1936 output in the countries treated in the table rose from 2.54 million metric tons to 3.34 million metric tons. The increase in output was particularly marked in Europe, rising from 1.1 to 1.57 million metric tons. This increase was partly due to the increase in the cow population, but much more to the rise in milk yields resulting from improvements in breeding and rearing.

The international trade in butter (see Table 5) has steadily expanded in the last two decades. Of the exporting countries those in Australasia took the greatest share in this increase. Exports from Denmark in the last few years have remained at about the same level as the average for the five years 1924-1928. At the same time the Netherlands, the second most important exporting country in Europe, was able to expand her exports. Exports from Sweden, Latvia, Lithuania, Estonia and Poland have all shown considerable increases in recent years. On the other hand, exports from Argentina have been well below the average for the years 1924-28. The leading exporting country was throughout Denmark with the exception of 1935, in which year the exports from New Zealand exceeded those from Denmark, while in the two following years they remained only a little behind.

The *United Kingdom* easily takes first place among the importing countries. As a result of the numerous obstacles and limitations on imports in the other importing countries her share in total world imports rose from 64.7 per cent. in 1909-13 and 62.2 per cent. in 1924-28 to 67.1 per cent. in 1929-33 and finally to almost 80 per cent. in the years from 1934 to 1936.

Apart from the *United Kingdom*, *Germany* is the only country which still imports large quantities of butter. In 1929 imports into Germany reached 135,500 metric tons, a figure higher than any previously attained. In the following years these imports fell off continually, amounting to only 59,144 metric tons in 1933, but since 1934 they have been steadily increasing again, reaching 92,290 metric tons in 1938.

Of the other European countries, the *Belgo-Luxemburg Union*, *France* and *Switzerland* have reduced their imports to small quantities. In fact since 1935 *France* has had a butter surplus, though this has been small, amounting

TABLE 5. — *Butter Production in different countries.*
(Thousand metric tons).

Countries	1925	1929	1933	1936	1937
<i>Europe</i>					
Germany	228.0	350.0	425.0	496.0	521.3
France	195.6	219.6	217.6	...	207.8
Denmark	141.0	179.0	185.0	179.9	183.4
Netherlands	75.0	86.7	88.1	101.3	100.6
Ireland	68.0	81.8	(6) 82.2	64.5	62.3
Czechoslovakia	60.0	65.0	66.7	68.8	...
Sweden	32.0	47.9	55.0	66.5	72.1
Belgium . . . . .	...	60.2	69.8	65.0	63.0
Poland . . . . .	...	...	(50.0)	(50.0)	...
United Kingdom . . . . .	...	(7) (48.3)	(47.5)	(48.0)	...
Italy	(2) 50.0	42.1	43.8	...	...
Latvia	23.1	26.0	28.9	31.7	...
Finland	17.9	24.2	23.8	27.8	29.7
Switzerland	12.5	15.7	25.5	27.0	26.0
Austria	(1) 12.0	...	22.0	22.4	...
Lithuania . . . . .	...	3.1	9.9	15.8	17.0
Estonia	7.2	13.7	11.5	13.8	15.9
Norway	2.7	3.8	8.9	11.4	12.1
Hungary	(1) 3.0	4.0	8.2	10.0	11.3
Greece . . . . .	...	...	...	6.0	6.0
Spain . . . . .	...	7.6	7.1	...	...
<i>Total for 21 European countries (8)</i> . . .	1,103.2	1,346.7	1,482.5	1,574.6	...
<i>U. S. S. R. (3)</i> . . . . .	...	77.8	124.3	...	...
<i>North America</i>					
United States	915.0	979.0	1,065.5	976.1	967.1
Canada	122.2	117.4	147.7	165.5	163.1
<i>South America</i>					
Argentina	38.3	27.9	32.6	31.9	30.9
Brazil . . . . .	...	...	(6) 16.3	16.7	...
Chile . . . . .	...	(4) 3.5	...	4.0	...
Peru	1.0	...	...	...	...
<i>Africa</i>					
Egypt	17.9	...	...	...	...
Union of South Africa	9.2	11.6	(6) 13.9	21.1	...
Algeria . . . . .	...	(7) 2.1	...	...	...
<i>Australasia</i>					
Australia (5)	142.4	131.5	190.4	196.7	...
New Zealand	78.5	103.7	151.1	171.0	180.5
<i>Asia</i>					
Syria and Lebanon . . . . .	...	...	...	3.5	7.1
Japan . . . . .	...	...	...	2.5	...
<i>Grand Total (8)</i> . . .	2,537.0	2,846.0	3,258.9	3,336.5	...

Figures in *italics* = factory output only (not total output).

Figures in *parentheses* = very rough estimates.

(1) 1927. — (2) 1926. — (3) Output of the large dairies and the small dairies of the collective farms and consumers' co-operative societies. — (4) Census 1929-30. — (5) Financial year, finishing in the year given. — (6) 1934. — (7) 1930. — (8) In calculating the totals, when there were no figures for a given year, the figures for the nearest year have been interpolated.

TABLE 6. — *World Trade in Butter.*

Country	Average 1909-13	Average 1924-28	Average 1929-33	1934	1935	1936	1937	1938
Exports in 1000 tons								
<i>Exporting countries:</i>								
Denmark	88.7	153.9	161.6	149.8	138.4	146.2	153.0	158.0
New Zealand	17.6	66.9	105.2	132.8	141.7	142.1	151.2	133.0
Australia	35.2	46.3	78.1	111.9	116.5	84.2	83.0	104.1
Netherlands	34.1	43.0	34.2	36.9	46.8	60.2	53.8	50.9
Sweden	20.8	13.1	20.3	23.2	20.3	19.1	23.5	28.6
Latvia	—	8.9	17.2	15.7	16.8	17.3	19.2	23.3
Ireland	—	25.4	22.3	25.8	27.0	26.3	19.3	19.2
Lithuania	—	1.6	8.0	9.7	12.2	14.6	15.1	17.4
Finland	11.9	12.6	15.5	11.1	10.2	14.0	13.9	17.1
Estonia	—	7.9	12.5	10.1	10.8	11.0	13.2	14.7
Poland	—	4.9	8.5	4.4	5.7	10.9	8.1	13.2
Argentina	3.1	25.4	20.5	8.3	6.8	10.3	8.8	7.3
U. S. S. R.	68.2	27.9	27.0	37.9	29.1	23.2	14.6	(¹) 0.2
Other countries	45.3	41.3	35.8	28.5	41.1	38.7	39.3	...
<i>Total . . .</i>	<i>324.9</i>	<i>459.1</i>	<i>566.7</i>	<i>606.1</i>	<i>620.7</i>	<i>618.0</i>	<i>616.0</i>	<i>...</i>
Imports in 1000 tons								
<i>Importing countries:</i>								
United Kingdom	206.6	261.6	380.3	487.5	481.6	491.8	472.6	479.0
Germany	50.5	96.5	99.5	61.8	71.0	75.4	86.8	92.3
Other countries	62.1	74.7	86.7	60.2	63.5	52.2	52.7	...
<i>Total . . .</i>	<i>319.2</i>	<i>452.8</i>	<i>566.5</i>	<i>609.5</i>	<i>616.1</i>	<i>619.2</i>	<i>612.1</i>	<i>...</i>

(¹) January to September.

in 1937 to 2,329 metric tons and in 1938 to 2,314 metric tons. The largest importers after Germany are now the Netherlands Indies (imports in 1938 = 4,330 metric tons), British India (3,118 metric tons) and British Malaya (2,128 metric tons (¹)).

IV. — Pig and beef fats.

The production and sale and particularly the international trade in these fats has suffered exceptionally from the competition of vegetable and marine animal fats.

The *United States* is the leading lard-producing country in the world. In 1923-24 her production reached the record figure of 1,270,000 metric tons. This

(¹) See also Butter Production, Trade and Prices in 1938 in *Monthly Crop Reports and Agricultural Statistics*, April 1939.

TABLE 7 — *Principal Exporting and Importing Countries for Lard.*

Country	Average 1924-28	Average 1929-33	1934	1935	1936
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(Exports in thousand metric tons).

Exporting countries

United States	352.1	292.0	197.3	44.2	50.9
Hungary	4.1	2.5	8.2	19.3	14.5
Denmark	10.8	19.3	10.7	12.3	12.2
Netherlands	31.3	19.3	7.7	14.8	9.1
Brazil	0.2	2.0	5.4	13.6	8.2
Argentina	0.1	1.0	2.9	7.9	...
Yugoslavia	0.4	0.6	1.5	4.5	7.4
Poland	0.0	0.2	0.0	3.3	5.2
Hong-Kong	—	1.6	2.0	4.3	4.3
China	4.7	3.1	1.2	3.0	2.9
<i>Grand total . . .</i>	493.7	341.6	263.9	127.2	114.7

(Imports in thousand metric tons).

*Importing countries**Europe:*

United Kingdom	119.8	131.6	142.3	77.8	77.2
Germany	105.6	88.4	41.4	30.3	29.9
Czechoslovakia	33.7	21.4	12.1	8.1	13.9
8 other European countries ⁽¹⁾ . .	72.4	34.3	12.3	5.8	5.5
<i>Total . . .</i>	331.5	275.7	208.1	122.0	126.5

America:

Mexico	⁽²⁾ 24.2	23.9	16.3	...	...
Porto Rico	6.6	9.8	10.1	7.7	11.0
Cuba	42.1	19.8	10.8	11.0	...
<i>Total . . .</i>	72.9	53.5	37.2	(35.1)	(38.4)

Asia:

Hong Kong	—	0.6	0.7	2.8	3.4
<i>Grand Total . . .</i>	404.4	329.8	246.0	159.9	168.3

⁽¹⁾ Belgium-Luxemburg, Netherlands, Austria, Switzerland, France, Italy, Poland. —⁽²⁾ 1925-28.

was followed by a decline, due at first to marketing difficulties, and after 1933 to Government measures and drought. In 1933, however, output still amounted to 1,109,000 metric tons, but by 1935 it had fallen to 575,000, rising again to 759,000 tons for 1934, but falling back to 650,000 tons for 1937. For decades a substantial part of this output had been exported, in the last five years before the War and in the 1924-29 period about a third. However, for the reasons mentioned above, exports fell from their average of over 350,000 metric tons for the five years 1924-28; in 1933 they were still 265,000 tons, but by 1935 this figure had dropped to 50,000 tons.

This decline in exports from the United States was in part favourable to other exporting countries such as Denmark, the Netherlands, Hungary, Yugoslavia, Canada, Brazil and China. Nevertheless, the increase in exports from these countries was small compared with the reduction in exports from the United States, so that total exports from the principal exporting countries of Europe, North and South America and Asia fell from an average of 406,000 metric tons for the five years 1924-28 to about 134,000 metric tons in 1936.

The data relating to the production of beef fats is very incomplete. The principal exporting countries are Argentina, Australia, New Zealand, Uruguay and the United States. Exports go mainly to the United Kingdom, Germany and Czechoslovakia. In recent years the United States has also become a net importer. International trade in this commodity has greatly declined now that the margarine industry is no longer dependent on these animal fats.

TABLE 8. — *Imports of Beef, Sheep and Goat Fats in different countries.*
(Import surplus in 1000 metric tons).

Country	Average 1924-28	Average 1929-33	1934	1935	1936
Germany	47.4	31.5	31.9	20.1	35.3
United Kingdom	54.1	55.8	43.1	3.3	26.7
Netherlands	56.8	27.6	11.7	11.2	9.8
Belgium	9.9	6.1	4.4	2.6	2.1
Denmark	1.9	7.1	3.6	(¹)(— 2.7)	(¹)(— 2.1)
France	3.0	(¹)(— 5.0)	(¹)(— 4.5)	(¹)(— 13.7)	(¹)(— 5.2)
United States	(¹)(— 47.0)	(¹)(— 28.9)	2.7	107.6	24.8

(¹) Export surplus.

V. — Marine animal oils.

Production.

A distinction must be made between fish oils, fish liver oils, and oils from whales and other marine mammals. Only for the world production of whale-oil, which, however, makes up about two-thirds of the total output of marine animal oil, is there reliable information. This is contained in the International Whaling

Statistics published by the Norwegian Government, on mandate from the *Whaling Committee of the International Council for the Study of the Sea*.

About 90 per cent. of the production of whale-oil in recent years has come from the Antarctic, the supply of whales in the Arctic having been seriously reduced by reckless whaling in the past.

In 1930-31 the output of whale-oil rose to 624,400 metric tons. At the same time the economic crisis had led to a great increase in stocks, and Norway, which produced over 60 per cent. of the total output, decided not to take part in the next whaling season. As a result, production in 1931-32 fell to 155,100 metric tons. In the next two years output was respectively 438,000 and 436,000 metric tons. These quantities could, however, only be marketed with difficulty, and the price of whale-oil, (No. 0-1) per English ton fell to £8 10s—£11 10s, against £34—£38 in 1925, £40—£90 in 1920 and £21 10s—£22 10s in 1913. This fall in prices, combined with anxiety about the decimation of whale supplies, led to agreements on the regulation and restriction of whaling, first between Norway and Great Britain, which in 1934-35 together accounted for about 94 per cent. of the total production, in approximately equal proportions, and in more recent years between all countries taking part in whaling.

TABLE 9. — *Output of Whale-Oil.*

(Thousand metric tons).

1909-10	48.1	1932-33	439.7
1912-13	129.8	1933-34	435.7
1929-30	474.0	1934-35	455.7
1930-31	624.4	1935-36	486.2
1931-32	155.1	1936-37	543.7

The conclusion of a comprehensive international agreement was necessary, because, besides Norway and Great Britain, other countries were increasing the extent of their whaling operations — Japan and the United States from 1935-36 and Germany from 1936-37. The particular regulations of the London Agreement may still be imperfect, but nevertheless limits are set to any sharp increase in production.

The principal producers of liver oils and other fish oils are the United States, Norway, Japan and Great Britain. In 1936 the United States output amounted to about 8,000 metric tons of liver oil and 121,000 metric tons of other fish oils. By far the larger part of Norway's output is exported, and in 1936 exports (there are no figures for production) amounted to 10,939 metric tons of medicinal oils, 11,767 metric tons of herring oils and 18,686 metric tons of other fish oils. In the same year exports from Japan were 36,666 metric tons. According to the data supplied by the 1934 Census of Production, Great Britain produced in that year 20,000 metric tons.

International trade.

Table 10 shows the movement of the international trade in marine animal oils. The big disparity between the total net imports and exports is due to the circumstance that a large part, principally the output of whale-oil, is transported

direct from the whaling fields to the consuming countries so that no country figures in the statistics as exporter.

The most important countries with export surpluses of marine animal oils are Norway, Japan, the Union of South Africa, Iceland and Indo-China.

Norway is only able to use a small portion of her output at home. Nevertheless, only part of her deliveries to foreign countries appear in the foreign trade statistics, as they mostly take place direct from the whaling fields. The main product in the visible exports is solidified whale-oil, the consumption of which has greatly increased since the War as a result of its employment by the margarine industry. There has also been a continuous increase in exports of fish liver oil and other fish oils. Germany was the biggest importer of whale-oil, and the United States of fish and fish liver oils. Practically all European, and many other countries, also imported these Norwegian products.

TABLE 10. — *Principal Exporting and Importing Countries of Marine Animal Oils and Fats.*

Country	Average 1909-13	Average 1924-28	Average 1929-33	1934	1935	1936
(Import surplus in 1000 metric tons).						
<i>Importing countries:</i>						
Germany	31.4	60.8	163.0	147.2	266.6	170.9
United Kingdom	50.5	44.2	89.6	122.4	128.2	165.6
United States	4.5	45.6	53.5	24.1	34.2	41.7
Denmark	1.0	4.9	14.5	14.5	20.5	25.8
Netherlands	7.4	23.5	50.4	19.2	(¹) (—7.1)	24.2
Belgium	—	8.9	13.2	8.7	18.3	22.5
Czechoslovakia	—	11.4	12.8	16.9	17.4	18.3
Austria	—	1.5	4.6	5.8	7.1	9.8
Poland	—	1.9	2.6	3.8	6.2	8.5
France	7.3	11.5	13.8	8.1	8.6	7.9
Hungary	—	0.8	0.7	4.2	5.1	5.0
Italy	6.2	3.2	4.5	3.9	2.6	1.8
Switzerland	0.6	0.8	1.0	1.4	1.6	1.6
<i>Total . . .</i>	<i>108.9</i>	<i>219.0</i>	<i>424.2</i>	<i>380.2</i>	<i>509.3</i>	<i>503.6</i>
(Export surplus in 1000 metric tons).						
<i>Exporting countries:</i>						
Norway	69.4	122.1	236.2	258.1	223.7	221.0
Japan	17.2	61.0	29.5	19.9	33.5	39.3
Union of South Africa	12.4	13.9	9.8	(²) (+0.2)	4.6	17.6
Iceland . . . . .	...	10.3	12.0	12.7	12.8	...
Indo-China	—	4.4	2.1	(²) (+0.2)	0.2	1.8
<i>Total . . .</i>	<i>99.0</i>	<i>211.7</i>	<i>289.6</i>	<i>290.3</i>	<i>274.8</i>	<i>279.7</i>

(¹) Export surplus. — (²) Import surplus.

Exports from *Japan* experienced quite severe fluctuations. This was not so much a result of variations in output as of the movement of prices. In recent years the most important importing countries have been Germany, Great Britain, the Netherlands, the United States and Australia.

Exports from *South Africa* consisted exclusively of whale-oil, and in recent years these have gone almost entirely to Great Britain and the Netherlands.

Iceland has also experienced quite a substantial increase in exports since the War. The principal exports are herring oil and medicinal liver oils, as well as fish oils for industrial purposes. The chief importers of herring oil in recent years have been Germany, Denmark, Norway, the Netherlands and Great Britain. Exports of medicinal liver oil went mainly to the United States and Norway.

Exports from *Indo-China*, consisting of fish oils, went mainly to France but in recent years the quantities exported have greatly diminished.

By far the most important of the importing countries is *Germany*. Imports, the most important of which is whale-oil, show a big increase over the pre-War figures. In the course of the last ten years Germany has at times absorbed more than half the total output of whale-oil. Norway supplied the greater part of these imports, but smaller quantities also came from the United Kingdom, the Netherlands, Japan and Canada.

Imports to the *United Kingdom* have also shown a continuous rise during the last decade, by far the greater part consisting in crude whale-oil. In recent years the principal countries of origin indicated have been Norway, the Netherlands, the Union of South Africa and British and foreign whaling fields. Imports of refined and hardened whale-oil, which have only been specified under a separate heading since 1933, came mainly from Denmark and Norway, while those of fish oils and fish liver oils came principally from Norway.

The third most important importing country is the *United States*. Imports of marine animal oils into the United States showed a tendency to rise up to 1931, and compared with pre-War years there was a large increase. From 1932 to 1934 imports declined, but increased again in 1935 and 1936 in consequence of the reduced output of other home-produced oils and fats. Home production of marine animal oils increased even more rapidly than imports.

The importing countries coming next in importance are the *Netherlands*, *Belgium*, *Denmark* and *Czechoslovakia*. These are all countries with a fairly large output of margarine, so that their imports consist mainly of whale-oils.

Utilization of marine oils and fats.

Apart from fish liver oils, which for the most part were used for tonics and medicines, marine oils were used almost exclusively for industrial purposes up to the first post-War years. The chief purchasers were manufacturers of soap, candles, linoleum, varnish, leather, metals and textiles. The accelerated progress due to the pressure of war in the field of oil manufacture, and particularly in refining and hardening, led finally to the use of marine oils in increasing quantities for the manufacture of food-stuffs, and primarily of margarine.

Germany is the largest consumer of marine oils. In the last two decades total consumption, in conjunction with the increase in the output of margarine, rose continuously. According to existing data in 1933, 153,000 metric tons were used in the margarine industry and 1,500 metric tons in the soap industry. A comparison of these figures with those of imports will show that only small quantities of whale-oil could have been at the disposal of other branches of production during the years in question.

In *Great Britain*, which is the second most important consuming country of whale-oil, this product is mainly used in the margarine and lard-compound industries. Thus in 1936, 66,000 metric tons were used in the margarine industry, 41,000 metric tons in the lard-compound industry, and 28,000 metric tons in the soap industry. Calculating on the basis of the import figures, therefore, only small quantities were free for other purposes.

In contrast to Germany and the United Kingdom, the *United States* uses the largest part of its whale-oil and other marine fats in the soap industry, about 90 per cent. of the whale-oil and more than half the fish oil being used for this purpose from 1932 to 1936. The margarine industry did not use any marine fats and the lard compound industry only about 1 per cent. of all fats and oils used.

VI. — Principal importing countries of oils and fats.

In recent years the principal importing countries, in order of the volume of their import surpluses, have been the United States, Germany, the United Kingdom, France and Italy; whilst the Netherlands, Denmark, and Czechoslovakia have also had substantial import surpluses.

Table II shows the total consumption and either the import surplus or the home output of oils and fats in the three principal importing countries. The calculation of the import surplus is based on the figures for actual imports and exports. The import surplus calculated in this way may differ substantially from the "real" import surplus, i. e. from the quantity obtained by including in the above imports the quantity of fat (e. g.; butter and pigfat) which is acquired through imports of fodders.

Up to 1915 the *United States* had for decades had a considerable export surplus of oils and fats which still in 1914 amounted to 238,000 metric tons. Since 1915, however, only in two years, 1921 and 1924, have there been export surpluses. The output of pig and beef fats, primarily of lard, continued to be considerably in excess of home requirements, while the output of butter was at least sufficient. Imports of oilseed and vegetable oils, however, increased from year to year. After 1923 the export surplus of animal fats showed a tendency to fall, moving from 544,300 metric tons in 1923 to 388,000 metric tons in 1934. In 1935 and 1936 imports of animal fats exceeded exports for the first time. There were big increases in imports of tallow and marine oil, while exports of lard and tallow fell to small amounts compared with earlier periods. As at the same time imports of oilseeds and vegetable oils were increasing still further, the total import surplus of oils and fats reached 1,076,000 metric tons in 1935, the figure

for 1936, however, falling to 927,000 metric tons. The highest import surplus yet reached occurred in 1937 with 1,142,000 metric tons. The big increase in imports was partly due to the reduction in the home output, resulting from unfavourable weather conditions and measures of restriction, and partly to increasing consumption. The increase in imports related primarily to linseed, palm kernel, palm oil, cottonseed oil, marine oils and coconut oil.

TABLE II. — *Supply of Oils and Fats in the United States, Germany and the United Kingdom* ⁽¹⁾.

(Thousand metric tons).

Year	United States		Germany		United Kingdom	
	Total consumption	Import surplus	Total consumption	Imports surplus	Total consumption	Home production
Average 1909-13	(¹) 2,696	(²)(³)(-238)	1,754	711	950	125,200 thousand metric tons per annum.
Average 1924-28	3,642	198	—	—	1,104	
1929	3,993	485	2,041	1,067	1,200	
1930	3,835	418	2,077	1,073	1,200	
1931	3,813	396	2,081	1,037	1,225	
1932	3,667	229	2,201	1,173	1,235	
1933	3,724	437	2,078	1,015	1,275	
1934	3,944	390	2,109	1,008	1,300	
1935	3,903	1,076	2,002	872	1,300	
1936	4,173	927	2,152	989	1,330	
1937	34,232	1,142	...	976	...	

(¹) In comparing the figures for the three countries with one another, it is to be noted that the calculation of the quantities has not been based on the same principles in each case. Thus in the case of Germany and the United Kingdom only the real fat content of animal fats is included; while in contrast to those for the United Kingdom and the United States the German figures include the fat content of milk, cheese and salted fat pork. In order to reproduce the figures in the form in which they were supplied by each country, no attempt has been made to standardize them. — (²) 1914. — (³) Export surplus.

In the three years 1935-37 about 25 per cent. of the consumption of oils and fats in the United States was met by imports. Measures of the most varied description were introduced to lessen this dependence on foreign countries.

The good cotton crop in 1937 and the increase in the production of lard in 1938 led to a fall in net imports to 693,100 metric tons in 1938, while the total consumption of 4,192,100 metric tons remained about the same as in 1937 (4,232,000 metric tons).

Until 1933, when *Germany* introduced a thoroughgoing control of the fat market aiming at the greatest possible self-sufficiency, her import requirements were considerably higher than in the five years 1909-13. The share of imports in total consumption rose from 41 per cent. in 1909-13 to 53 per cent. in 1932, but in the following year it started to move back towards the 1909-13 position.

The increased share of the home production is the more worthy of note because of the greatly increased consumption during the same period, consequent on improved earning possibilities. If account is taken of fats obtained through the importation of fodders, the dependence on abroad was about 60 per cent. in the five years 1909-13, 65 per cent. in 1928 and fell in subsequent years to 50 per cent. in 1935 and 1936.

As in the United States and Germany, the consumption of fats in the *United Kingdom* has also shown a large increase. The dependence on abroad has altered little, only 10 to 15 per cent. of the consumption being produced at home.

France is also largely dependent on outside sources for her supplies of fats and oils, but in this case the dependence is mainly on her own colonies. The following figures relate to the supply of fats and oils in France for 1935:

	Total oil and fat supply	Home production
	(Thousand metric tons)	
(1) Vegetable oils and fats	511.2	17.8
(2) Butter	210.4	215.0
(3) Lard and tallow	57.0	75.0
(4) Marine oils and fats	6.7	0
Total	785.3	307.8

Thus the share of imports in the total supply was about 60 per cent

The available data suggest a total consumption of food fats in *Italy* in the last few years of about 500,000 metric tons, 90 per cent. of which was produced at home. According to these estimates some 160,000 metric tons were used for industrial purposes, of which from 25,000 to 37,000 metric tons were supplied by home sources. The following table shows the figures in detail:

	Total consumption of oils and fats	Home production
	(Thousand metric tons)	
(1) <i>Food oils and fats:—</i>		
Olive oils	220.0	210.0
Seed oils	63.0	6.3
Salted pork fat and lard	166.0	165.7
Butter	52.5	52.0
Total	501.5	434.0
(2) <i>Industrial oils and fats:—</i>		
Animal and vegetable oils and fats	160.0	25.0-37.0
Total consumption of oils and fats	661.5	459.0-471.0

VII. — Utilization of fats and oils.

Development in general.

Some fats are suitable for food as soon as obtained, requiring no further processing and, as with butter and lard, are used almost exclusively for human consumption. The same is true of a number of vegetable oils which, after being pressed in the cold, only require filtering to be suitable for food. Vegetable oils obtained otherwise are, however, also gradually being made suitable for purposes of human consumption. Before the War, for example, all oils extracted by solvent were still considered to be suitable only for technical uses. It was only with the introduction of new refining methods by which free fatty acids, colouring substances and odours could be completely eliminated, that it became practical to obtain from extracted oils good, and in some cases, excellent edible oils. A similar development may be noted in the case of whale-oils, due primarily to progress in methods of hardening fats. This material, like many other oils and fats previously unsuitable for food, only enters indirectly into consumption, namely, after being manufactured into the so-called artificial edible fats such as margarine, lard compound, etc.

As a result of the great progress in oil production and oil processing, not only are nearly all kinds of oils, with a few exceptions (tung, castor, croton oil, and some others of less importance), suited for human consumption, but also a higher return can be obtained from various oil-yielding raw materials, and also in the case of many oils the percentage of the product suitable for human consumption has been raised. Whereas, for example in Italy 30 years ago about one-third of the output of olive oil could be used only for industrial purposes, with present day refining methods some 95 per cent. is suitable for human consumption.

In the last few decades the increase in the consumption of oils and fats has related almost entirely to their use for food purposes. The proportion of food fats to total consumption of fats and oils has, in fact, constantly increased. Thus of the total consumption of oils and fats in Germany over the period 1930-35 only about 32 to 34 per cent. was used for industrial and technical purposes. In the United Kingdom the figure was 28-29 per cent., in the United States about 30 per cent. and in Italy about 25 per cent.

Since it may be taken for granted that now as before butter and lard are used almost entirely for food purposes, the changes in utilization which we have mentioned must have occurred mainly among vegetable marine animal oils and fats. This is borne out by the statistics. While, for example, of the total consumption of vegetable oils and fats in Germany in 1913, only one-third was used for food purposes, in 1928 the figure had risen to two-thirds of the total consumption.

The increased demand for food oils strengthened the tendency of industry to use less valuable oils and fats. This tendency, however, has been very limited when particular properties of the oils were required, as, for example in the varnish, paints and lacquer industries. Industry also endeavoured to render

itself partly independent of vegetable oils and fats. Thus even before the War vegetable oils were replaced by mineral oils for lubricating purposes, and in the manufacture of candles paraffin was increasingly substituted for stearin. Quite recently successful attempts have been made to produce synthetic fats.

At the present time the fats and fatty oils still used for industrial and technical purposes are mainly of vegetable origin. The relatively small quantity of animal fats and oils still employed consist chiefly of tallow and residue fats. The largest consumer of industrial fats and oils is the soap industry, their employment in the manufacture of colouring materials, lacquer, lubricants, candles, linoleum, oil-cloth, leather, textiles and tin-plate each accounting for much smaller amounts.

Of the industrial consumption of fats and oils recorded in the United States (excluding the consumption by local painters), the proportions utilized for different industries over the five years 1931-35 were as follows: 56.5 to 67.8 per cent. for soapmaking, 12.4 to 17.5 per cent. in the preparation of colours and lacquers, and 2.8 to 3.5 per cent. in the manufacture of linoleum and oil-cloth; thus only about 20 per cent. remained over for other purposes and as waste. In the United Kingdom, of the total consumption for technical purposes 59 to 65 per cent. were used in soapmaking, 25 to 33 per cent. in the preparation of colours and lacquers, and 10 to 15 per cent. for other purposes, e.g. lubricants and oils for illumination. In Germany, of the total consumption of vegetable oils and fats for industrial and technical purposes in 1928, 40 per cent. was used in soapmaking, 31 per cent. went to the preparation of lacquers, colours and varnishes, 11.8 per cent. was employed in the manufacture of linoleum and oil-cloth, and 8.2 per cent. for other purposes.

Consumption of food fats.

Only in a few countries was the increase in the consumption of food fats and oils, which had increased everywhere during the last two decades, interrupted by the economic crisis. Indeed, in most countries and even in those with particularly high unemployment, the increase in consumption continued throughout the crisis. Any further increase in purchasing power will very probably be accompanied by a further rise in the consumption of these commodities.

The use of fat for food purposes can be considered under two main heads: for spreading on bread and in the preparation of food. The principal fat of the first type is butter. Butter consumption is therefore at its highest where the practice of spreading butter on bread is most generally diffused, that is, in the Central, North and North-West European countries, and in the countries of those other continents which have been settled mainly by emigrants from these European countries. This can be seen at once from the data on butter production and the butter trade. In all other countries the consumption of butter is small.

Only in the countries with a high consumption of butter did the conditions exist for any considerable consumption of margarine. In several such countries however, the production and consumption of margarine were either early restricted as in the United States and France, or entirely forbidden as in Canada, and Australia. But where margarine consumption was allowed to develop freely, in

many cases it approached the level of butter consumption, as in Great Britain; in some cases reached it, as in Germany, Sweden, the Netherlands, and Czechoslovakia; or in a few exceptional cases, such as Norway and Denmark, even exceeded it by more than double.

A third fat used to spread on bread is lard. Its use in this way is mainly limited to families slaughtering at home, the greater part being used for cooking and frying. In the latter use lard encounters competition from salted fat pork, and to some extent also from lard substitutes. In only a few countries, however, have the production and consumption of lard compound reached any considerable proportions.

TABLE 12. — *Consumption of Butter and Margarine in certain countries.*
(Kilogrammes per head).

Country	Butter				Margarine			
	1925	1929	1932	1936	1925	1929	1932	1936
Argentina . . . . .	...	...	1.0	...	—	—	—	—
Australia	13.0	13.4	13.2	...	—	—	—	—
Belgium . . . . .	...	7.8	10.4	...	4.0	5.9	3.6	6.3
Denmark	5.6	5.9	8.5	9.1	20.9	22.5	20.4	21.0
Germany	5.6	7.5	7.5	8.5	6.6	7.5	8.1	6.6
France	4.8	5.3	...	(1) 5.0	0.9	1.1	0.8	0.6
Italy	1.3	1.0	1.1	1.1	...	...	0.1	(2) —
Canada	12.4	13.3	13.8	14.6	—	—	—	—
New Zealand (3)	15.2	16.3	16.3	18.1	—	—	—	—
Netherlands	(4) 5.6	5.8	(5) 8.7	(5) 5.5	7.4	9.2	(5) 6.7	(5) 6.2
			(8.0)	(5.0)			(6.0)	(5.7)
Norway . . . . .	...	1.4	2.9	...	16.3	16.9	16.9	...
Sweden . . . . .	...	7.1	9.4	10.4	6.6	9.6	8.4	9.2
Switzerland . . . . .	...	5.8	6.5	6.7	...	...	...	...
Czechoslovakia . . . . .	...	...	(6) 4.5	6.6	...	(7) 2.7	(7) 3.1	(7) 5.0
United Kingdom	7.1	7.9	9.8	11.3	5.6	5.6	4.5	3.9
United States	8.0	7.9	8.2	7.5	0.9	1.3	0.7	1.4

— = Consumption practically nil. — ... = No information.

(1) 1935. — (2) A Decree-Law of February 1934 limited, and a Decree-Law of August 1937 prohibited the production and sale of margarine for food purposes. — (3) Business year, beginning in the year given. — (4) 1926. — (5) Figures in brackets give consumption less the quantity of butter which must be mixed with margarine by law. — (6) 1933. — (7) Margarine and other artificial edible fats.

In contrast to other oils and fats, the consumption of table oils only reached large proportions in countries producing olive oil. In certain of these countries, such as Italy, the consumption of olive oil is greater than that of all other fats together.

As with almost all important food materials the volume and composition of the consumption of food fats and oils is to a great extent conditioned by the climate, standard of living, occupation, way of life and the orientation of local production.

The degree to which the volume, and still more the composition, of fat consumption is affected by purchasing power is shown by the results of household budget inquiries. In the publication of the Institute mentioned at the beginning of the article ⁽¹⁾ are assembled the results of such inquiries in Belgium, Denmark, Germany, Finland, Norway, Poland, Sweden, Czechoslovakia, the United Kingdom, and the United States. The results show the same tendencies everywhere. Where income is rising the consumption of fats and meat increases, while the consumption of carbohydrate foodstuffs and especially of cereals falls off. The trends of consumption with regard to particular fats, however, vary greatly. Above a certain level of fat consumption further increases related entirely to the more expensive fats, chief of which was butter, while the consumption of other fats declined, sometimes at an exceptional rate. In the countries mentioned butter and margarine were most affected by the variations. When incomes were rising, the consumption of butter increased without exception.

The consumption of margarine was much larger than the consumption of butter in the lower income groups in Denmark (0.7 kg. of butter and 28.4 kg. of margarine per consumption unit per annum in the lowest income group), in Germany (2.7 and 11.8 kg.), in Norway (1.3 and 23.3 kg.), in Sweden (7.5 and 12.2 kg.) and in the United Kingdom (4.0 and 7.2 kg. per head per annum). In Denmark, in contrast to the other countries, the consumption of margarine in all social groups only experienced slight fluctuations. It appears further that in Denmark margarine is not only a food material of the industrial and town populations, but in many cases also of the rural, and even agricultural, population. The very high figure of 28.4 kg. for the consumption of margarine against only 0.7 kg. for butter was, in fact, found in those households investigated in the household inquiry which were situated in rural areas. There are indeed other countries where the consumption of margarine is also fairly high in the rural areas; in general, however, margarine is primarily the food fat of the industrial worker. Both in relation to the absolute price level and the price relationships between margarine and other fats competing with it, the consumption of margarine experiences large fluctuations.

Production of margarine and other artificial food fats.

Table 13 shows how outside Europe the production of margarine, lard compound and similar food fats has only assumed large proportions in the United States. Whereas margarine is the most important artificial food fat in European countries, in the United States lard compound leads. The production of lard compound has been encouraged in the U. S. A. both by past legislation restricting the production of margarine and by the large home output of cottonseed oil, a cheap raw material which is well suited for the lard compound industry. In Europe the production of lard compound and vegetable cooking fats has only reached any considerable proportions within the last two decades.

⁽¹⁾ English edition pp. 380 to 384.

Though from the outset the margarine industry met with fierce opposition from the farming population, in most countries special measures against its production were not long maintained. The production of butter and other animal fats such as lard and salted fat pork did not keep pace with the increase in demand; hence an excessive rise in prices could only be avoided and the supply of fats assured by having recourse to vegetable oils and fats, and later also whale-oil, which could only be used for food purpose in the form of margarine. With few exceptions legislation was confined to checking the illegitimate competition of margarine with butter, the prevention of adulteration and of the confusion of margarine with butter, and the observing of certain hygienic prescriptions relating to the production and sale of margarine; in short, to giving to agriculture and the consumer the protection found necessary for them. Only in Canada, Australia, New Zealand and South Africa, where food habits were favourable to a considerable consumption of margarine, were its production and consumption completely or almost completely prohibited by legislation. This occurred soon after its appearance in these countries.

This was more or less the situation before the War and in the first decade after the War. Conditions only changed radically with the onset of the depression. As a result of the rapid decline in purchasing power it gradually became more difficult to market the ever increasing output of butter in the principal margarine-producing countries. The margarine industry, on the other hand, as a result of progress in organization and technique and the abundant supplies of raw materials, was able to meet the fall in purchasing power by further reducing the already low price of margarine. Thus to take one example, the average cost per ton of fats and oils used by the German margarine industry fell from RM.865 in 1928 to RM.343 in 1933. The fall in prices was even greater in the other margarine-producing countries. No proof is required to show how this pressed on the already falling butter prices. The lower butter prices gave an increased competitive power to butter, but in many countries the effect of these low prices on agriculture was disastrous, for here there could be no solution by means of a shift to other types of production. Governments therefore began to introduce the most varied measures to protect the butter industry. Both in butter exporting and butter importing countries these measures were largely aimed at margarine. No such measures have been passed in the United Kingdom, while those taken against the production and marketing of margarine in Denmark were only temporary, and then not very far reaching; but in the United States and all the other important margarine-producing countries in Europe a whole series of special measures were taken.

All the regulations relating to the production and marketing of margarine, however, went to show that radical measures were only possible to a very limited extent. The various measures taken almost always aimed at raising the price of margarine to make it easier to sell butter; but limits were set to the extent of the rise. The difficulty is that margarine is the main food fat of a large section of the population whose position is not entirely favourable from a nutritional point of view, and with them dearer margarine leads not to the desired shift to other fats but to a reduction in their total consumption of fat; indeed, during

TABLE 13. — *Output of*

	1913	
<i>United States</i>		
Margarine.	69.0	
Lard compound and other food fats	453.6	
<i>Germany</i>		
Margarine.	200.0	
Artificial and mixed food fats		
Unmixed food fats		
<i>United Kingdom</i>	(²) 81.8	
Margarine . . . . .	...
Lard compound.		
<i>Denmark</i>		
Margarine.	42.0	
Palmin. . . . .	...
Lard compound. . . . .	...
<i>Czechoslovakia</i>		
Margarine and other artificial food fats . . . . .	...
<i>U. S. S. R. (³)</i>		
Margarine.	0	
Vegetable fat compounds	0	
Animal fat compounds.	0	
<i>Netherlanas</i>		
Margarine.	89.9	
Artificial food fats and other refined fats and oils.	0.1	
<i>Sweden</i>		
Margarine	23.6	
Artificial food fats.	0.9	
Coconut fat	0.3	
<i>Norway</i>		
Margarine.	27.4	
Lard compound. . . . .	...
<i>Belgium</i>		
Margarine.	10.1	
<i>France</i>		
Margarine	15.6	
<i>Finland</i>		
Margarine . . . . .	...
<i>Japan</i>		
Margarine . . . . .	...

(¹) From April 1, including Saar territory. — (²) Figures for 1912. — (³) Production began in

and other Artificial Food Fats.

metric tons).

1928	1932	1933	1934	1935	1936	1937
143.6	92.2	111.3	119.9	173.1	178.4	180.2
518.6	428.8	432.1	546.3	701.6	719.7	...
436.8	510.0	405.5	381.7	(¹) 404.8	422.5	366.0
17.1	...	16.9	12.2	15.6	15.7	16.5
32.8	...	42.3	...	33.4	27.6	24.8
...	...	175.3	166.6	178.8	183.9	187.0
...	...	56.0	57.9	89.4	...	...
76.5	73.3	74.3	71.7	78.0	78.2	77.7
...	1.1	1.4	1.2	1.5	1.5	1.5
...	1.6	1.6	1.1	1.7	1.7	1.6
...	46.0	63.9	75.2	67.3	75.1	65.0
0	33.3	38.2	32.8	...	...	...
0	4.4	3.9	27.0	...	...	...
0	0.5	9.6	9.4	...	...	...
139.9	(⁴) 62.7	(⁴) 51.7	(⁴) 52.5	(⁴) 53.2	(⁴) 55.5	(⁴) 65.9
35.8	3.9	3.8	4.1	6.9	6.6	7.1
50.7	49.9	50.2	53.3	55.9	56.7	59.5
0.7	0.4	0.4	0.7	1.2	1.8	2.5
0.9	1.1	1.2	1.4	1.7	1.9	2.2
46.6	47.9	48.1	49.5	51.3	55.3	53.4
0.4	0.6	0.7	1.1	1.5	1.4	1.6
44.4	28.2	34.7	38.2	45.8	52.7	...
31.2	31.1	32.0	33.0	28.0	29.7	...
9.8	6.3	8.5	8.3	10.4	11.7	12.6
0.5	1.1	1.6	1.6	1.4	2.8	...

(¹) Including the quantity of butter which must legally be mixed with margarine.

the crisis it was only cheap margarine which enabled these classes to consume reasonable quantities of fat. In nearly all countries in which the production of margarine was regulated, therefore, measures were taken at the same time to ensure an adequate and cheap supply of fat to those sections of the population whose purchasing power was small.

The decline in the output of margarine after 1930, which was caused partly by the measures directed against it and partly by keener competition from butter, lasted only until 1933 or 1934. By 1934 in several countries and by 1935 in almost all the important producing countries there was recovery in production. The position of the fats markets in these countries had changed considerably as a result of smaller crops of oilseeds, the reduced output of animal fats owing to bad fodder harvests and the compulsory limitation of production, and also in consequence of an increased demand due to less unemployment and better earning possibilities.

The nature of the fats and oils used for the margarine and other artificial food fat industries has altered greatly in the last ten years. Margarine was originally prepared almost exclusively from animal oils and fats; vegetable oils and fats were only gradually introduced. At the beginning of the century this process was accelerated by the rise in the prices of animal fats. The movement away from the fats and oils of land animals has continued until to-day, and in recent years has been interrupted in only a few countries by special measures aiming at an increased use of home products, and then generally only temporarily.

Apart from these few cases, the proportion of the land animal fats and oils at present used in the margarine and artificial food fats industries is everywhere very small. Thus in the United States their share in the margarine industry fell from 72 per cent. in 1913 to 27 per cent. in 1929, somewhat over 8 per cent. in 1936 and only 6 per cent. in 1937. In Germany's margarine and artificial food fats industry it dropped from 50 per cent. in 1913 to 5.7 per cent. in 1928, 3.5 in 1933, 2.3 per cent. in 1935, 1.1 in 1936, and 1.2 per cent. in 1937. In the margarine industry in the United Kingdom it fell from 10.6 per cent. in 1927 to about 6.0 per cent. from 1935 to 1937, and in the lard compound industry from 2.8 per cent. in 1927 to under 1 per cent. in 1936 and 2 per cent. in 1937. And in Denmark's margarine and artificial food fats industry the proportion fell from 77 per cent. in 1905 to 18 per cent. in 1913, 7 per cent. in 1928 and 6 per cent. in 1935.

The type of vegetable oils and fats which replaced animal fats varied greatly from country to country, and increasingly so as technical advances rendered large numbers of oils suitable for the manufacture of margarine.

As we have seen, in addition to land animal fats and vegetable oils and fats, a further raw material, whale-oil, has been brought into use since the War. To-day it has become one of the most important fat materials for the production of margarine and other artificial food fats. The share of whale-oil in the total quantity of oils and fats employed in Germany's margarine and artificial food fats industries rose from 9.8 per cent. in 1924 to 15.7 in 1938, 39.1 per cent. in 1933, 54.4 in 1935, 29 per cent. in 1936 and 27.7 in 1937; in the United Kingdom's margarine industry the proportion increased from 16.8 per cent. in 1927 to from

37 to 38 per cent. in the years 1933 to 1935, 42 per cent. in 1936 and 41 per cent. in 1937, and in the lard compound industry from 16.8 per cent. in 1927 to 26 per cent. in 1935 and 28 per cent. in 1936 and 1937; in Denmark's margarine industry it rose from 1.4 per cent. in 1924 to 22.7 per cent. in 1935; and finally in Norway's margarine industry the proportion in 1935 was 24.7 per cent. there being no data for earlier years.

H. BÖKER.

CHANGES IN THE PROFITABLENESS OF AGRICULTURE IN CERTAIN COUNTRIES OF EUROPE ⁽¹⁾

SUMMARY: I. Introduction. — Changes in the gross return, cost of production and social income in the following countries: Switzerland, Norway, Finland, Sweden, Denmark and Württemberg (Germany). — II. Introduction. — Changes in the gross return, cost of production and social income in the following countries: Germany, Scotland, France (Soissons and Étrépany), Hungary, Estonia, Latvia, Lithuania, Netherlands (Overijssel), Poland and Czechoslovakia.

I.

In the first part of this article we shall study changes in the profitability of agriculture from the beginning or end of the War to 1935-36 or 1936-37 in Switzerland, Norway, Finland, Sweden, Denmark and Württemberg. In the second part we shall deal with countries the material for which covers a more recent period. As regards Germany, the country will be dealt with as a whole in the second part, but Württemberg will be separately treated in this first part as the information about this territory is more complete, enabling us to go back to 1924 and even to consider the years immediately preceding the War.

We have drawn up graphs which show changes in the gross return, cost of production and social income during this period ⁽²⁾.

⁽¹⁾ Previous articles on this topic have appeared in the October, November and December 1938 numbers of the *Monthly Bulletin of Agricultural Economics and Sociology*.

⁽²⁾ The *gross return* is the increase in wealth obtained on the farm in the course of a year by transformation, exchange and revaluation. It thus covers money receipts, contributions in kind to the household and to subsidiary undertakings, payments in kind to employees and increases in the farm inventory.

The *cost of production* covers the expenditure through which the gross return has been obtained; the cost of labour, including an amount representing family labour earnings; expenditure, including taxes and contributions in kind, required for the running of the farm; decreases in supplies and expenses incurred in improving land fertility; depreciation charges and interest payments on assets.

The difference between the gross return and the cost of production gives the *profit or loss on total farm assets*. This shows in what proportion the prices of agricultural products must be raised or lowered for the gross return to cover exactly the cost of production.

By subtracting working expenses (the portion of the cost of production consisting of the outlay on fertilizers, seed, fodder, repairs, depreciation, and costs of management) from the gross return, the *social income* is obtained, which consists of the sum of the returns from the farm, thus including the net return (the actual return on assets), taxes and cost of labour.

A glance at these graphs will show the consequences for agriculture of the troubled period through which it has passed.

From 1914 to 1918, in all the countries considered, the gross return rose very steeply, reaching a figure well above the cost of production. In Finland the maximum was not reached until later, in 1921-22, when devaluation took place. In Finland, Norway and Switzerland the social income was in 1918 above the cost of production. But in Sweden from 1918, in Norway from 1919, and in Denmark and Switzerland from 1920, the gross return fell, remaining below the cost of production. After rising slightly above the cost of production in Switzerland in 1923-24 and in Denmark in 1928-29 and 1929-30 it fell again soon afterwards. The biggest fall took place from 1930 to 1933, made still worse, in the case of Switzerland, by the cost of production maintaining its level and even rising. About 1936, however, equilibrium was restored. The gross return started to rise again and tended once more to pass the cost of production. The policy of maintaining the prices of agricultural products, which the Governments had persistently pursued, began to bear fruit. In Württemberg the gross return and the social income fell about 1927 and particularly in 1930-32. From 1933 it tended to rise as in the other countries.

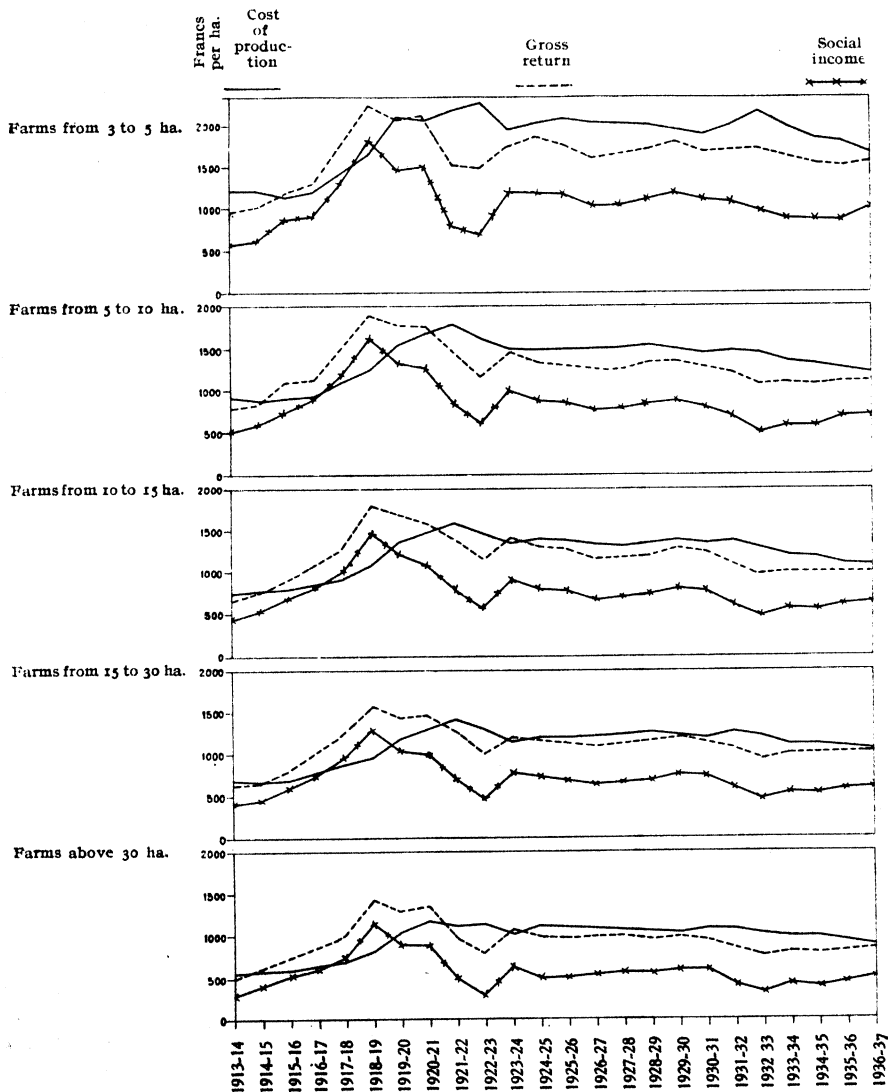
There were thus three periods of depression—that immediately following the boom at the end of the War, that of 1926-27 and that of 1929-33. In Finland there were only two—one in 1923-24, the other in 1930-33. The economic position of agriculture in Finland differed substantially from that in other countries. In Finland, the cost of production and gross return only reached their peak between 1927 and 1930, whereas in Sweden, Norway, Denmark and Switzerland the maximum figures had been reached by 1920. After a certain date, 1922 in Sweden, 1923 in Switzerland, 1925-26 in Denmark and Norway, the range of the fluctuations narrowed and the cost of production followed almost a straight line. The small farms of Switzerland, Denmark and Finland show less stable figures than the others. Danish farms experienced the smallest variations, owing to the high degree of specialization on the farms and the movement into dairy production and pig-rearing, as well as the close association between Danish agriculture and foreign trade. But the farms of less than 10 hectares stood up to the successive crises much less well than the larger farms.

From 1918 there was an increase, amounting in Finland to a trebling, of working expenses, which consist of repairs, depreciation charges, expenditure on fertilizer, seed-corn, fodder and overheads; the social income fell in a greater proportion than the gross return. From 1933, however, it began once again to move towards the latter, showing that agriculture was trying to recover its lost equilibrium.

Let us now look at the movement of prices of agricultural products and the profit or loss accruing to the peasant. To make the comparison possible we shall find the gain or loss of the peasant, representing the profit or loss on total farm assets per 100 monetary units of each country. When there is a loss the figure given will also indicate the proportion by which the prices of the farm products would have had to be raised for the gross return to cover exactly the cost of production.

Switzerland.

During the period of transition between 1918-19, when Swiss agriculture was giving its best results, and 1922-23, the crucial year of the post-War crisis, the gross return fell while the cost of production rose. In 1922-23 the peasants

GRAPH I. — *Switzerland.*

were losing from 30 to 52 per cent. of their gross return; but the consequences of the 1932-33 crisis were not so outstanding. The farms which enabled farmers to make the highest profits in 1918-19 and which stood up best to the periods of crisis were those of from 10 to 15 and from 15 to 30 hectares. In 1923-24 for the last time they yielded a gross return above the cost of production. Similar conditions prevailed in the farms of over 30 hectares.

Profit or Loss on Total Farm Assets per 100 francs Gross Return in Switzerland.

	1918-19	1922-23	1923-24	1929-30	1932-33	1934-35	1935-36	1936-37
Farms of 3 to 5 ha.	26.21	— 52.15	— 12.51	— 10.17	— 25.55	— 21.11	— 20.09	— 8.38
» » 5 to 10 ha.	36.34	— 37.07	— 2.69	— 10.30	— 35.77	— 24.74	— 13.61	— 16.83
» » 10 to 15 ha.	39.00	— 28.12	1.67	— 5.00	— 30.59	— 19.40	— 9.41	— 8.71
» » 15 to 30 ha.	39.60	— 31.12	3.11	— 2.35	— 28.44	— 14.73	— 8.14	— 5.13
» » over 30 ha.	42.53	— 42.06	2.65	— 4.24	— 34.51	— 24.02	— 13.09	— 5.21

Only in 1935-36 did Swiss agriculture begin to recover from the crisis. The price index for agricultural products fell 2 points, from 112 in 1934-35 to 110 in 1936-37. The index for the cost of production moved from 155 to 148, thus dropping seven points. Farmers' losses ⁽¹⁾ were greatly reduced, especially on farms in the 10 to 15 and 15 to 30 hectare classes. The position of farmers improved still further in 1936-37, the price index for agricultural products advancing from 110 to 119 while the cost of production index fell from 148 to 142. Thus the difference between the gross return and the cost of production has nearly disappeared.

Norway.

Norwegian agriculture was very prosperous in 1918-19, the gross return standing well above the cost of production; and in Trøndelag even the peasants were able to make a profit of over 40 crowns per 100 crowns gross return.

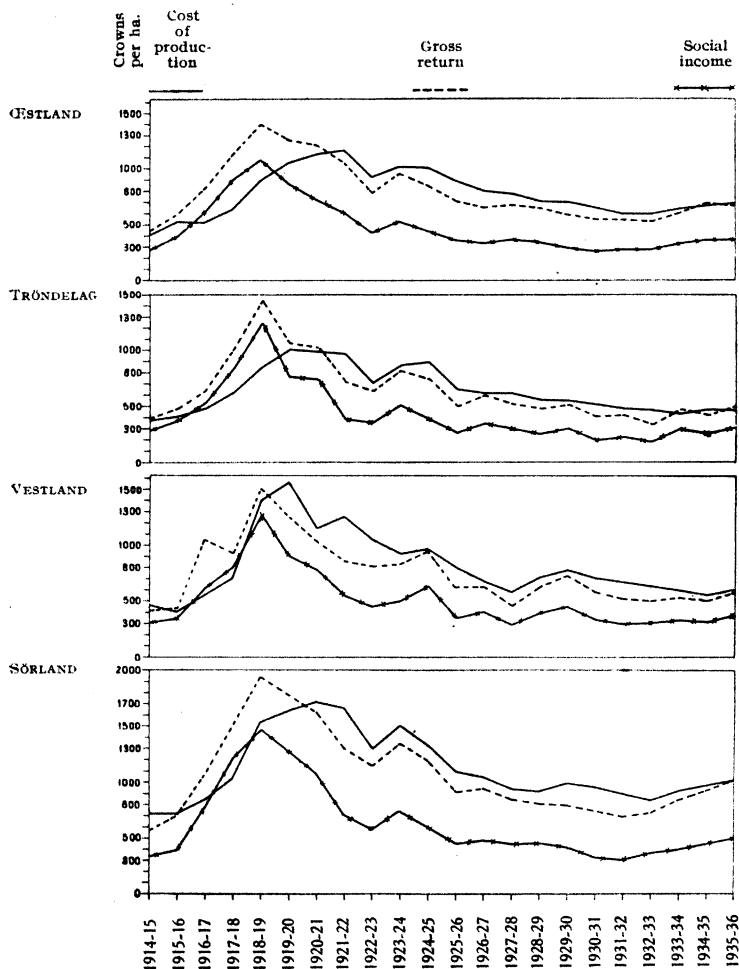
Profit or Loss on Total Farm Assets per 100 crowns Gross Return in Norway.

	1918-19	1922-23	1926-27	1932-33	1934-35	1935-36	1936-37
Østland	36.15	— 12.20	— 2.40	— 13.51	— 3.08	— 1.58	— 0.84
Trøndelag	41.52	— 16.40	— 3.21	— 15.53	— 2.33	— 6.78	— 2.36
Vestland	6.97	— 29.28	— 2.72	— 28.82	— 12.65	— 7.73	— 2.32
Sørland	19.97	— 14.03	— 2.09	— 27.77	— 9.27	— 5.03	— 0.16

⁽¹⁾ In speaking of a gain or loss, we mean the excess of the gross return over the cost of production, or of the cost of production over the gross return.

The relationship between the gross return and the cost of production was most unfavourable in the mountainous area of Vestland. The position of the peasant remained up to 1936-37 more precarious than in the other areas. The

GRAPH II. — *Norway.*



most favourable conditions are no longer found on the southern plateau, Sørland, but in Østland, which has a greater rainfall than other parts of Norway and where the forests, which have been greatly developed, led to the growth of towns and played a decisive part in the life of the peasant. During the crisis years the losses suffered by farmers were smaller than elsewhere. In 1935-36, for the first time

since 1921-22, there was a profit, amounting to 1.58 crowns per 100 crowns gross return. The gross return itself increased in a greater ratio than the cost of production, as the adjoining figures show. In the following year the cost of production rose while the gross return remained the same, and the peasant suffered a small loss.

Cost of Production and Gross Return in Norway.

(Crowns per hectare)

	Cost of production		Gross return		Milk and milk products	Cattle	Pigs	Vegetable products	Other products
	per ha.	Index numbers	per ha.	Index numbers					
Ostland									
1934-35	633	100	614	100	230	56	72	149	107
1935-36	670	106	681	111	158	61	83	180	99
1936-37	687	108	681	111	278	71	88	139	95
Trondelag									
1934-35	465	100	477	100	143	55	28	153	98
1935-36	485	104	454	95	161	61	36	92	104
1936-37	493	106	505	106	188	73	33	108	103
Vestland									
1934-35	611	100	524	100	157	64	54	95	134
1935-36	564	92	524	100	153	70	46	95	160
1936-37	600	98	586	112	185	60	54	109	178
Sorland									
1934-35	933	100	854	100	276	72	138	138	230
1935-36	986	106	939	110	276	85	178	171	329
1936-37	1032	111	1030	121	314	82	215	169	350

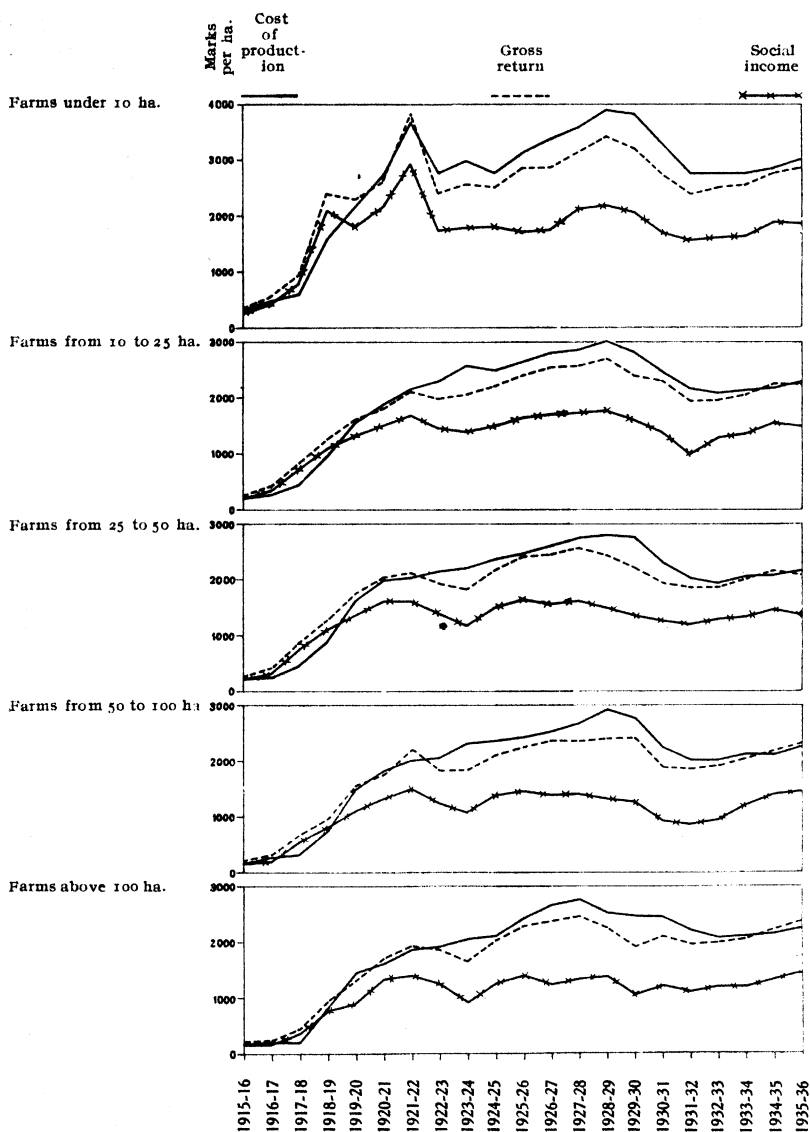
In Trøndelag the results were not satisfactory in 1935-36 compared with the preceding year and the year following; the farmer lost about 7 crowns per 100 crowns gross return. This was due to losses on cereals, the gross return on vegetable products having fallen from 153 crowns in 1934-35 to 92 crowns. The year 1936-37 was again normal, and the gross return rose above the cost of production.

In Vestland the cost of production fell by 8 per cent. in 1935-36. In 1936-37 it rose, but to a level below the 1934-35 figure. The gross return was not high enough to yield a profit to the peasant.

In Sørland the gross return rose more rapidly than the cost of production from 1934-35, so that by 1936-37 it had almost reached the level of the latter.

Finland.

In 1921-22, the last year in which the gross return remained clearly above the cost of production, the price of agricultural products were very high, with the exception of the prices of beef and potatoes. In 1931-32 they were at their lowest. They later rose considerably, so increasing the gross return.

GRAPH III. — *Finland.*

Farmers suffered their greatest loss in 1923-24. The gross return fell as a result of the fall in prices while the cost of production rose. In contrast, in 1929-30 the fall in gross return was accompanied by a fall in the cost of production. From

Prices of the Principal Agricultural Products in Finland.
(Finnish marks)

	1921-22	1923-24	1929-30	1931-32	1935-36
Milk (10 kg.)	17.0	16.5	15.4	12.6	14.5
Butter (10 kg.)	405	310	288	216	243
Cheese (10 kg.)	209	185	175	153	150
Beef (10 kg.)	72	75	78	50	70
Pigmeat (10 kg.)	150	122	130	76	89
Wheat (100 kg.)	350	230	209	252	255
Oats (100 kg.)	190	165	135	112	130
Potatoes (100 kg.)	60	70	70	48	53

1930-31 the deficit was reduced, and by 1935-36 farms of from 50 to 100 hectares and over 100 hectares were making profits of respectively 1.73 and 5.98 marks per 100 mark gross return.

Profit or Loss on Total Farm Assets on Finnish Farms.
(Percentage of gross return)

	1921-22	1923-24	1929-30	1931-32	1935-36
Farms of less than 10 ha.	* 1.27	— 17.58	— 16.96	— 15.21	— 5.75
Farms of 10 to 25 ha.	— 0.51	— 24.68	— 18.49	— 15.31	— 2.55
Farms of 25 to 50 ha.	3.98	— 21.73	— 24.35	— 9.43	— 0.99
Farms of 50 to 100 ha.	7.58	— 24.92	— 17.33	— 11.34	1.78
Farms over 100 ha.	3.59	— 21.94	— 28.25	— 12.04	5.98

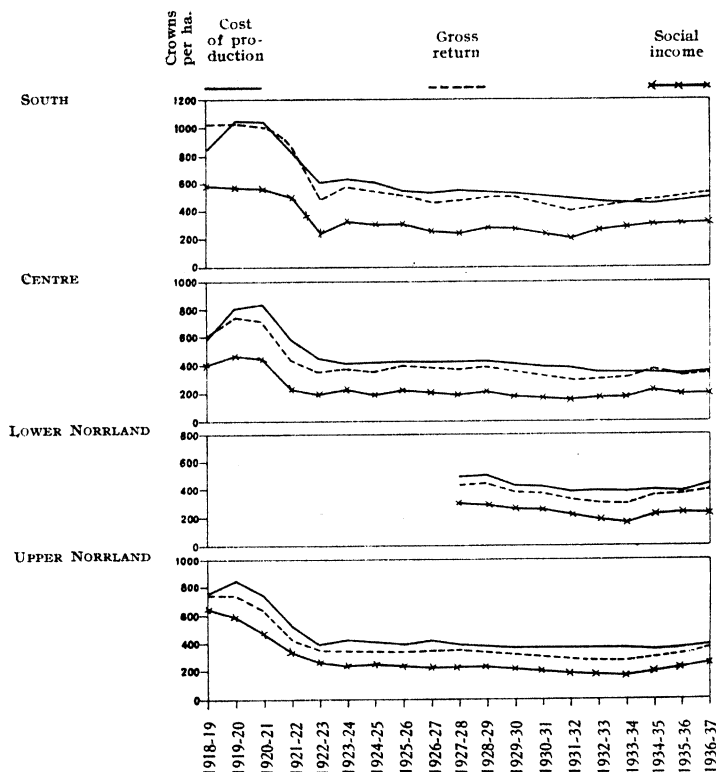
Sweden.

There are considerable differences between the figures for farms in North, Central and South Sweden. In Norrland the main agricultural product is livestock, scarcely 1.8 per cent of the total area being used for arable farming. In Central Sweden the distribution between arable and grazing land is more equal. In the south, arable farming leads, yielding very high returns; in 1918-19 the peasants made considerable profits.

Profit or Loss on Total Farm Assets per 100 crowns Gross Return in Sweden.

	1918-19	1922-23	1926-27	1931-32	1934-35	1935-36	1936-37
South Sweden	16.78	— 26.72	— 14.72	— 22.58	6.80	7.86	5.51
Central Sweden	3.03	— 27.87	— 23.81	— 30.61	2.80	— 3.02	— 2.30
Lower Norrland	—	—	—	— 15.27	— 9.04	— 5.96	— 12.66
Upper Norrland	— 1.34	— 13.21	— 16.90	— 21.51	— 18.60	— 11.75	— 5.51

In 1918-19 the farms in Central Sweden yielded the farmers a profit of only three crowns per hectare for each 100 crowns gross return. In Norrland in the same period there was a loss. During the worst years of depression, 1922-23 and 1931-32, the farmers of South and Central Sweden suffered greater losses than those in Norrland. The improvement in 1934-35 proved satisfactory for the

GRAPH IV. — *Sweden.*

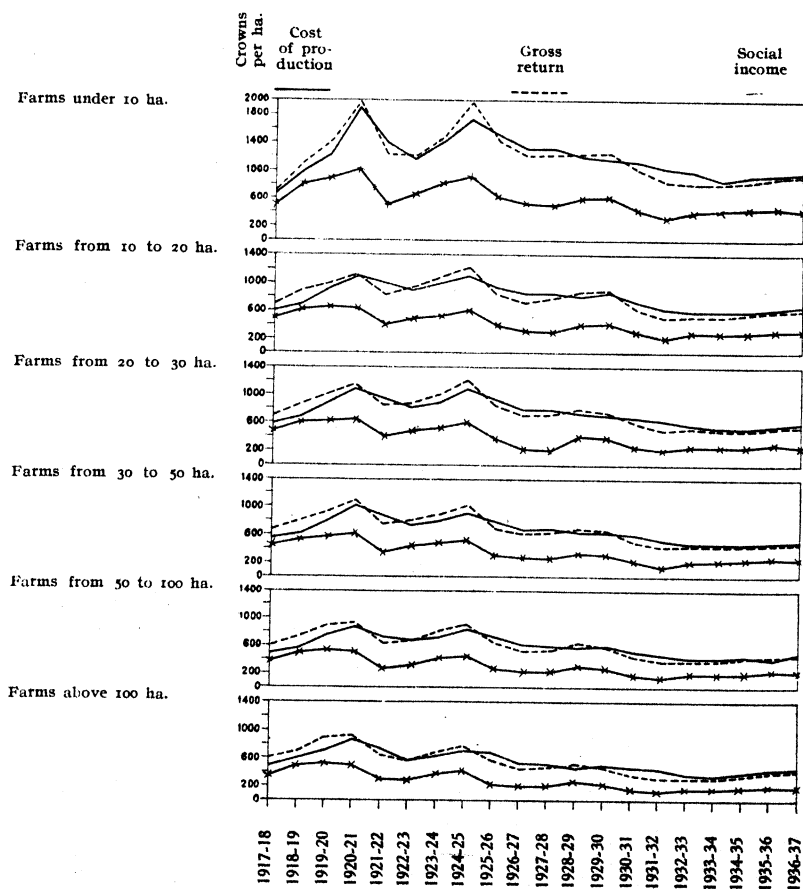
peasants of South and Central Sweden, who made considerable profits. In 1935-36 the position improved still further, the farms in South Sweden yielding a larger profit than in 1934-35, while the Norrland farms experienced a reduction in their annual deficit. The gross return of farms in Central Sweden, however, fell of the same year below the cost of production, the actual loss being about 6 crowns per 100 crowns gross return. The price index (1909-13 = 100) for livestock products rose from 107 in 1934 to 121 in 1935 and the price index for vegetable products from 107 to 108, while the price index for goods needed in farming rose from 121 to 129. In 1936 the price index for livestock products reached 131, while the index for vegetable products remained at 108, the price index for goods needed

in farming rising to 133. It was probably due to the rise in the prices of animal products that farmers in Upper Norrland were able to halve their deficit in 1936-37. The rise in prices of articles needed for running their farms and the pause in the upward movement of the prices of vegetable products led to the peasants earning a smaller profit in this year than in the year before.

Denmark.

A glance at Graph V shows three years of prosperity, 1920-21, 1924-25 and 1928-29; three years of deep depression, 1921-22, 1926-27 and 1931-32; and four years during which the gross return tended to approach the cost of production, the years between 1932-33 and 1935-36. The gains and losses experienced by Danish peasants during these three periods were as follows:

GRAPH V. — *Denmark.*



Farms under 10 ha.

Farms from 10 to 20 ha.

Farms from 20 to 30 ha.

Farms from 30 to 50 ha.

Farms from 50 to 100 ha.

Farms above 100 ha.

Crows
per ha.

Cost
of pro-
duction

Gross
return

**Social
income**

1917-18
1918-19
1919-20
1920-21
1921-22
1922-23
1923-24
1924-25
1925-26
1926-27
1927-28
1928-29
1929-30
1930-31
1931-32
1932-33
1933-34
1934-35
1935-36
1936-37

Profit or Loss on Total Farm Assets per 100 crowns Gross Return in Denmark

	1920-21	1921-22	1924-25	1926-27	1928-29	1931-32	1934-35	1935-36	1936-37
Farms of less than 10 ha.	2.26	— 14.19	7.57	— 9.07	3.16	— 20.74	— 3.67	— 3.83	— 10.62
Farms of 10 to 20 ha.	5.74	— 14.53	9.86	— 10.91	3.49	— 25.18	— 2.48	— 0.61	— 7.47
Farms of 20 to 30 ha.	6.22	— 10.39	10.61	— 12.74	5.04	— 21.27	— 2.72	— 0.53	— 7.10
Farms of 30 to 50 ha.	6.62	— 12.37	10.20	— 15.29	4.24	— 23.30	— 1.47	— 1.16	— 6.69
Farms of 50 to 100 ha.	6.55	— 15.36	9.57	— 14.95	4.96	— 23.25	— 1.58	— 1.04	— 5.65
Farms of over 100 ha.	2.50	— 11.08	8.65	— 17.77	5.80	— 26.63	— 2.49	— 0.46	— 4.17

The most prosperous year was 1924-25, the worst, 1931-32. The farms giving the best results in 1924-25 were those of from 20 to 30 and from 30 to 50 hectares; these farms, together with those of less than 10 hectares, also suffered least during the worst period of depression, 1931-32. The figures for 1934-35, 1935-36 and 1936-37 show how difficult it is to reduce costs of production under the highly industrialized system of farming used in Denmark. While the price index for agricultural products moved from 116 in 1934-35 to 115 in 1935-36 and to 118 in 1936-37, the price index for goods needed in farming moved as follows:

(1909-1914 = 100).

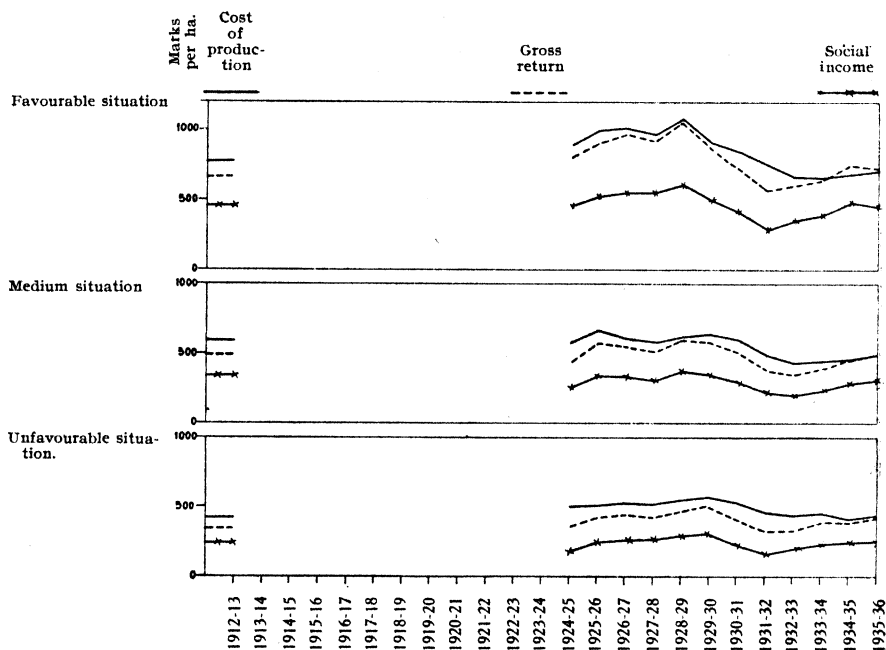
	1934-35	1935-36	1936-37
Fodder concentrates	107	106	131
Fertilizers	90	91	93
Building materials	172	176	185
Equipment	164	168	176

The considerable increase in the prices of goods needed in farming explains perhaps the greatly increased deficit in 1936-37. The best year since 1929-30 was 1935-36, when losses were reduced to a minimum, and farms of from 50 to 100 hectares even yielded a small profit to their farmers. In spite of the lower value yielded by pig fattening, the increase in the gross return from milk production, the raising of meat cattle and arable farming has been such as to lead to an increase in the gross return well above the cost of production in these farms of 50 to 100 hectares:

	Cost of production in crowns per hectare	Gross return in crowns per hectare in Denmark					
		Total	Vegetable products	Cattle	Milk	Pigs	Other products
1934-35 . . .	449	442	77	31	141	146	47
1935-36 . . .	475	480	95	40	165	130	50

Württemberg (Germany).

Before the War agriculture was being carried on at a loss in this country. We do not know what the position was during and after the War, the accounting office having resumed work only in 1924. In 1924-25 the difference between the cost of production and the gross return was greater than in 1912-13 on farms in rather unfavourable positions, less great on farms in good positions. After falling in 1927-28 the cost of production and the gross return rose in

GRAPH VI. — *Württemberg (Germany).*

1928-29, the latter more rapidly. Then, up to 1931-32 the cost of production and gross return fell, so great being the fall in the latter that the peasants on the best-placed farms lost 32 marks per 100 marks gross return and those on the less well placed farms 44 marks.

From 1933-34 the gross return began to rise again, cereals giving very good yields and being of excellent quality, while the rise in prices of milk for manufacturing also helped to improve the situation. In the next year the crops were not less satisfactory than the year before, but the main factor to raise the level of the gross return was the upward movement of the prices of animal products. The price index for slaughter cattle rose from 64.3 in 1933-34 to 70.9 in 1934-35

and the price index for animal products from 97.5 to 105.0. Peasants' profits in the middle and lower Neckar areas, where natural conditions are most favourable for farming, were 9 marks per 100 marks gross return. In the other areas the deficit was greatly reduced.

*Profit or Loss on Total Farm Assets per 100 marks Gross Return
in Württemberg.*

	1912-13	1924-25	1928-29	1931-32	1934-35	1935-36	1936-37
Favourably situated farms . .	— 16.12	— 11.43	— 1.53	— 31.65	9.31	2.94	—
Less favourably situated farms	— 20.04	— 30.32	— 6.65	— 30.43	— 2.52	— 0.13	—
Unfavourably situated farms	— 21.74	— 36.71	— 14.87	— 44.05	— 5.10	— 3.53	—

In 1935-36 farms situated in an unfavourable position and those in an average position gave better results than in the previous year. On the farms in a favourable position the average profit to farmers fell to about 7 marks, per 100 marks gross return, the gross return itself also falling as the crops had suffered from drought. In 1934-35, the yield per hectare in the middle and lower Neckar area was 29.2 quintals for wheat, 29.4 for rye, 29.9 for barley, 32.9 for oats and 203 for potatoes; in 1936 only 24.9 quintals of wheat, 24.6 of rye, 26.4 of barley, 27.5 of oats and 182 of potatoes were harvested. The changes in social income, which have been about the same as the changes in gross returns, are shown in the following table.

Social Income per hectare.

(1912-13 = 100).

	1928-29	1931-32	1933-34	1934-35	1935-36
Favourably situated farms	129	62	82	102	94
Less favourably situated farms	107	62	66	81	87
Unfavourably situated farms	116	65	91	96	101

(to be continued).

INTERNATIONAL CHRONICLE OF AGRICULTURE

ITALY

As regards price movements in the home market, economic conditions in Italy have been characterized by a tendency to relative stability of wholesale prices, while in foreign trade there has been an improvement in the balance of trade.

According to the figures of the Central Institute of Statistics, the movement of trade with foreign countries during the last two years has been as follows:

	1937 (Thousand lire)	1938
Imports	13,592,185	10,918,183
Exports	7,853,086	7,959,547
Balance	— 5,739,099	— 2,958,636

The value of exports in 1938 was slightly (1.3 per cent.) above that in 1937, while imports fell by 19.7 per cent., mainly as a result of greatly reduced purchases of wheat, which fell from 1,387,541,000 lire in 1937 to 216,450,000 lire in 1938. Even leaving the value of wheat out of account, however, there is still a fall in imports of 12 per cent. This fall is partly to be attributed to the fall in the prices of imported goods. The excess of imports has thus been reduced from 5,739 millions in 1937 to 2,959 millions in 1938, a fall of 2,780 million lire.

The value of Italy's foreign trade is shown below:

	1937 (Thousand lire)	1938
<i>Imports</i>		
Raw materials for industry	5,989,483	5,212,263
Semi-manufactured materials for industry	2,889,562	2,375,422
Finished goods	1,907,861	2,013,047
Foodstuffs and living animals	2,805,279	1,317,451
Total	13,592,185	10,918,183
<i>Exports</i>		
Raw materials for industry	947,859	807,371
Semi-manufactured materials for industry	1,722,973	1,579,630
Finished goods	2,724,234	2,864,268
Foodstuffs and living animals	2,458,020	2,708,278
Total	7,853,086	7,959,547

During the two years considered, there has been a large reduction in the value of imports of foodstuffs and live animals, their share of total imports falling from 20.6 per cent. to 12.1 per cent. In absolute figures imports of raw materials have also fallen; imports of oilseeds fell from 513.1 million lire in 1937 to 199.5 million lire in 1938; of cotton from 1,041.1 million to 807.4 million lire and of wool from 434 to 340 millions.

In exports, the percentage of foodstuffs and living animals exported increased from 31.3 to 34.1 per cent. and of finished goods from 34.7 to 36 per cent. Foodstuffs earned about 250 million lire, mainly as a result of increases in fruit and market garden products.

The Government has recently given the following instructions for the exportation of farm products, which consist largely of fruit and market garden products:

- a. to turn more and more to the production of higher-priced varieties;
- b. to revise methods of cultivation so as to keep costs of production within the limits set by competition;
- c. to raise the value of the products by bettering their quality;
- d. to improve the organization of transport and the costs involved;
- e. to reorganize the home market so as to increase consumption and regulate production.

New economic organization of agricultural producers.

In the Chronicle of last December we spoke of the Law of June 16, 1938 which set up provincial consortia of agricultural producers. We saw how they are defined as organizations to control and develop the work of producers in the provinces, and that this control and development is to be carried out in accordance with the instructions of the Ministry of Agriculture and Forests and the farm corporations.

The consortium, which is composed of all the landowners and tenants of the province, must carry out the production plans for autarchy. By the regulations published in the Royal Decree of February 2, 1939 ⁽¹⁾, the consortium consists of six sections, representing respectively the cultivation of cereals, the vine, the olive, fruit and market gardening, textile fibres and animal husbandry. Other sections may be formed, adding to or replacing those mentioned.

The sections are intended to protect the interests of agricultural producers "in harmony with the economic interests of the nation". In addition they are to encourage technical and economic progress in the branch of production which they direct.

Technical progress is encouraged, *inter alia*, by spreading the knowledge of appropriate systems of cultivation and by the campaign against plant diseases and insect pests. The Government has already appropriated 100 million lire for this campaign.

In the economic sphere the sections are required to regulate crops by the system of "crop licences" already applied to hemp, the castor oil plant, sugar beet and tomatoes. They must also regulate the marketing of the products.

The sections shall:

- a. regulate the output of the products and inform the competent authorities of faults and imperfections and infringements of the laws and corporative regulations;
- b. undertake the accumulation of stocks of goods, and the taking of the measures necessary for paying the producers by whom the goods were supplied or selling these goods;
- c. construct, or contribute to the construction of warehouses and equipment for storing, sorting and processing the products and by-products.

⁽¹⁾ *Gazzetta Ufficiale del Regno d'Italia*, February 16, 1939, No. 39.

The law entrusts the administration of the *ammassi* or collective stocks of products to the consortia. In operations connected with the preservation, processing and sale of the products so stocked they may employ the services of the agricultural consortia of the provinces, which in this matter will function as executive bodies.

The production plans worked out by the corporations are regulated to adapt national production as far as possible to the needs of consumption. They will be applied by the new consortia with the concurrence of the parties concerned, the employers and the workers.

These measures will enable the producers' consortia to undertake obligations towards the State, the syndical organizations and the various processing industries "to furnish a given quantity of products or to place a given area under a given crop".

As we have said, the former agricultural consortia, converted from co-operative societies with limited liability into public utility associations ⁽¹⁾, work in close collaboration with the provincial producers' organization. In all the provinces they have been formed compulsorily into a single body called a provincial agricultural consortium, which in general performs the following operations under the Ministerial Order of February 2, 1939 ⁽²⁾:

a. it buys anywhere on its own account, or for the account of third parties, and distributes among the farmers of the province what they may require for their farms and the related industries;

b. it sells for cash or on credit either at home or abroad its own products or those of the provincial farmers, to the account of the provincial producers' consortia;

c. it administers directly, or in collaboration with the provincial producers' consortia, factories for the production of commodities used in agriculture and the processing of agricultural products;

d. it may hire out or sell agricultural machines and equipment to the farmers of the province;

e. it procures for, and assists farmers of the province to obtain, agricultural credit, also making use of farm credit in kind;

f. it may construct or assist in the construction of warehouses, laboratories, workshops, refrigerating plant, for the purchase and sale, processing, preservation, preparation or manufacture of commodities for the use of farmers and farm produce.

These organizations are forbidden to undertake any speculative operations or commercial operations not connected with agriculture.

Another type of economic organization is now represented by the National Association of Beet Growers, the Association for oil-yielding Herbaceous Plants and the Union for Oil Fuels, Lubricants and Farm Motors. The first two regulate the cultivation respectively of sugar-beet and oil-yielding plants and arrange contracts with manufacturers for the supply of the products. By such "collective economic agreements" the farmers are guaranteed equitable conditions for the marketing of their produce.

All the above types of agricultural organization are of a public nature; in addition private organizations such as co-operative wine-cellars, co-operative cheese-dairies, co-operative organizations for fruit growing and market gardening, and co-operative drying-rooms for cocoons have been formed to eliminate unnecessary middle-men and to ensure remunerative prices for the principal products.

⁽¹⁾ See the Chronicle cited above.

⁽²⁾ *Gazzetta Ufficiale*, February 4, 1939, No. 29.

Revision of national employment regulations:

The Decree-Law of December 21, 1938 ⁽¹⁾ changed the organization of the labour market. The Decree lays down that the employment of workers is "a public concern in the interest of national production and the State". Hence persons charged with the appointment of labour must be considered as "public officers". The finding of employment is entrusted to the professional associations of labour, which are considered the most suitable bodies for this purpose.

The Decree-Law of December 21, 1938 makes it a basic rule that the worker should be engaged by the employment bureau dealing with his own occupation. A distinction is made between the demand for a specified individual and the demand for a certain number of unspecified workers. This distinction is important for the agricultural section, where it is recognized that as well as confidence between employer and worker, ability on the part of the worker is necessary and must be demonstrated, not only in the interests of the farm in question, but also of production in general. Thus employers are allowed to engage labour directly in all cases where there is a risk of damage to persons, raw materials or equipment, or to ensure the continuity of the work. These cases occur principally under conditions requiring the continuity of labour or where work is urgent.

Other exceptions to the principle that labour should be engaged through the intermediary of employment bureaux refer to:

- a. the employer's relatives, not beyond the third degree of kinship, living with him and at his charge;
- b. the managing staff with responsibility for the development of the enterprise, that is to say all those included in the managing and technical staff;
- c. all workers working in "co-participation", including *métayers*, and sharecroppers in general; clearly where there is or should be a relationship of confidence the workers cannot be employed at random;
- d. cases in which the demand for labour must be specific, i. e. where the demand is for workers qualified for a given work requiring special knowledge.

The labour officers must satisfy the needs of employers, by obtaining workers with the special qualifications asked for. Professional ability being equal, preference will be given to applicants for employment in accordance with (*inter alia*) the position of the family and the number of children supported. The worker is therefore no longer considered as a single individual but in relation to his family.

For the engagement of agricultural workers, the confederation of Farm Labourers has set up an employment bureau in each province and is organizing a network of communal bureaux. There will be about 7,000 agricultural employment bureaux operating throughout Italy.

To enable an equitable distribution of labour in accordance with the conditions in each zone to be made, the Confederation has drawn up a worker's card which will make it possible to follow the man's work and which will also show his economic condition and the position of his family.

The employment service is superintended by the Ministry of Corporations, to which is attached the Central Employment Commission. This organization must give general administrative and technical directions to assure the regulation of employment and its co-ordination with internal migration and emigration abroad.

(1) *Gazzetta Ufficiale*, December 30, 1938, No. 298.

Price regulation and adjustment of wages.

To avoid market fluctuations and unjustified increases in the cost of living a Decree-Law of June 16, 1938 ⁽¹⁾ authorized the Central Corporative Committee to fix maximum selling prices for goods of every description. However, if there occurs some disequilibrium between costs and prices which is harmful to production, the Government may take exceptional measures. To achieve a proper regulation of prices, collective agreements are already in operation in certain branches of production. The corporation may be requested to examine questions relating to the prices of goods and services, which matters also fall within the scope of the activities of the advisory committees set up by the Decree-Law of January 4, 1938.

The presiding committees of the provincial councils of the corporations ascertain and regulate prices in their own provinces, and periodically publish a list of maximum wholesale and retail prices for the most widely consumed goods. This list is compulsory for sales occurring in the territory of the main commune of the province, while for the other communes of the province special lists are periodically published. The sale at prices above those given in these lists is forbidden.

By the same decree the prohibition against increasing the leases paid on urban real estate and rural property, dated October 5, 1936 (stabilization of the lira) is extended to December 31, 1940, even if other tenants or tenant-farmers take over the use of the property. In the year following the expiration of the lease the tenant may reclaim anything he may have paid in excess.

Another regulation enables the Ministry of Corporations to order enquiries in regard to commodity stocks held in farms, warehouses, etc.

As part of the general adjustment of wages to the cost of living, the central Corporative Committee has approved the revision of the wages of agricultural labourers, agreed upon by the two Confederations of Agriculture. The new schedules came into force on March 23, 1939. By this agreement wages under collective contracts at present in force are increased by 8 per cent. for regular labour, day-labourers and specialised labour. However, farm labourers of 12 provinces in the basin of the Po, who were granted an earlier increase of 6 per cent. by the Interconfederal Agreement of October 8, 1938, will now only receive an increase of 6.5 per cent.

Of wages paid in money and kind, the percentage increase provided affects only the part paid in money.

The money part of the minimum salaries fixed by contract, and the current salaries of administrative and technical employees of farms and forest undertakings, are increased by 8 per cent.

Inheritance of farms.

The legal commission to draw up the third book of the new Civil Code accepted the principle that farms shall be inherited as a whole.

When one or several rural properties constituting an economic unit, the revenue from which does not exceed the normal needs of a farm family, form part of the inheritance, and when the deceased does not name the inheritor, the commission has decided that this unit will be allotted in its entirety, as part of the inheritance, with tools, equipment, and the deadstock and livestock belonging to it, to that inheritor who is prepared to accept the inheritance and who is deemed capable of farming the properties.

⁽¹⁾ *Gazzetta Ufficiale*, September 13, 1938, No. 209.

A Government regulation will fix for each zone, taking account of the estimates of the land survey, the maximum and minimum areas corresponding to the needs of a normal farm family. If several eligible inheritors claim the inheritance, and the deceased has not named an heir, the judicial authority will choose the one who does or could farm the properties mainly with the work of himself and of his family, and who is in a position to improve these properties. If these conditions are fulfilled by more than one claimant, the one descending in the direct male line will be chosen. Other conditions being equal, a claimant who has already farmed the properties or the one with the largest number of male children will be preferred.

The properties may also be awarded to several co-heirs asking to farm them in common.

If the heir is not in a position to repay the shares due to his co-heirs without contracting debts too onerous for the farm, the judicial authority may authorize him to repay the co-heirs in instalments, including also the part due to them from the revenue of the farm. The farm continues to be held in common with the co-heirs throughout the period of repayment.

UNION OF SOUTH AFRICA

With the exception of the gold-mining industry all branches of the economic life of the Union suffered last year from the recession in world markets and the political uncertainty in Europe. Nevertheless the decline which has taken place in South Africa is not considered unfavourably, and the Union still counts as one of the economically soundest countries of the world. The Finance Minister in his budget speech of March 15, 1939 was able to point to a surplus of £1,650,000 instead of the deficit of £100,000 of his original estimate, this favourable development being due to the greater receipts from the taxation of the gold-mines and other mining concessions.

The volume of foreign trade reckoned according to value has shown a considerable decline as against 1937, especially as regards the export of agricultural products. However, by comparison with the year 1930-34 preceding the revival, this decline in foreign trade may rather be considered as a healthy consolidation.

Despite a record gold production of 833,903 lb. in 1938 as against 804,692 lb. in the preceding year, the export of gold bars has declined in value from £82.7 million in 1937 to £48 million in 1938. But when considering the gold exports, account must also be taken of the earmarked gold, that is to say of the gold that was deposited for safe-keeping with the South African banks after the September crisis to be held to the account of overseas buyers. Thus the gold reserves of the South African Reserve Bank have risen by nearly 8 million in the course of 1938.

Foreign Trade of the South African Union.

(Pounds sterling).

	1930-34 (Average)	1937	1938
Exports	80,380,842	125,395,436	83,384,006 (¹) (104,099,000)
Imports	53,223,244	103,382,242	95,881,850
	+ 27,157,598	+ 22,013,194	— 12,497,884 + (¹) (8,217,150)

(¹) Including the earmarked gold.

Principal Agricultural Exports of the Union.

	Quantity (Thousands lb.)		Value (Pounds sterling)	
	1937	1938	1937	1938
Angora hair	4,560	5,111	476,400	353,100
Skins and hides	56,800	64,700	2,395,400	1,440,000
Wool, greasy and scoured	237,300	244,400	12,645,400	8,983,400
Wattle bark and extract	244,870	209,800	1,000,900	908,000
Butter	7,155	3,530	383,500	213,600
Maize	1,711,000	440,800	3,194,100	960,700
Maize meal	426,000	154,000	867,900	334,100
Citrus fruits	4,100	3,500	2,056,400	1,373,400
Deciduous fruits	2,300	2,250	634,600	622,300
Grapes	2,000	2,250	587,800	655,100
Dried fruits	15,500	22,550	262,500	372,100
Meat, fresh and frozen	17,700	4,200	253,200	71,700
Sugar	496,000	475,000	1,944,000	1,898,500
Wines	1,700	1,900	233,500	265,100

As regards agricultural products, the exports of maize and wool were most adversely affected. Despite an increase in the quantity of wool exported from 237.3 million lb. in 1937 to 244.4 million lb. in 1938 the value of the wool exports showed a noticeable decline, partly due to the falling price levels in the world market, but partly due also to the growing world production of artificial fibres. The decline in the maize exports is mainly explained by the maize harvests having been considerably worse than in the previous year as a result of drought and delayed rains (3,521.9 million lb. in 1937-38 as against 5,621.8 million lb. in 1936-37).

Corresponding to the decline in purchasing power of the farming population there has also been a decline in imports, particularly of textiles, machines and motor vehicles. Increases of imports were shown only by foodstuffs, which rose from £4,781,450 in 1937 to £4,920,000 in 1938, by drink which rose from £604,000 to £646,000, and by fodder which rose from 7.45 million lb. worth £35,000 to 9.2 million lb. worth £47,000. Most striking of all, however, was the increase in wheat imports from 1.0 million lb. worth £5,780 in 1937 to 157.0 million lb. worth £459,700 in 1938.

The prospects for the maize harvest are, according to the latest estimates, exceptionally favourable, so that 6,000 million lb. are being expected for 1939. The 1938-39 wheat harvest amounted to 1,045 million lb. as against 609.4 million lb. in the preceding year, the tobacco crop to 23.9 million lb. as against 20.6 million lb. and sugar production to 1,041.9 million lb. as against 1,014.4 million lb. The wool clip for 1938-39 amounted to 261,000,000 lb. (greasy) as against 246,000,000 lb. in 1937-38, and is favourably judged as regards quality, although higher prices are hardly to be hoped for so long as the present international tension lasts.

Industrial prices have shown a much quicker recovery than agricultural ones, and agricultural wage-rates cannot keep pace with industrial wage-rates, so that an increasing flight from the land is the inevitable consequence.

To summarize, one can say that owing to the rise in gold prices and the consequent expansion in the mining industries South Africa's general economic situation is one of moderate prosperity (1). As regards the weak position of agriculture, that

(1) See the Annual Report of the Minister of Agriculture (August 1937-August 1938) in *Farming in South Africa*, December 1938; *Zuid-Afrika*, March 1939 and following numbers.

is to be improved by new trading agreements, by the development of the system of market regulation initiated in 1937, and by other State measures of support and development.

Trade agreements.

The agreement between the Union and *Germany* was renewed on September 19, 1938 for the fifth time. The Governments of the two countries had agreed to conclude the new agreement on September 1, that is, two months before the expiration of the old one, so that Germany should be able to make her wool purchases already at the beginning of the new wool season. However, as a consequence of the political crisis in Europe the negotiations were delayed some weeks. The amount of the agreement was provisionally fixed at £6,355,000, as against £5,686,000 in the preceding year, roughly corresponding to the value of the trade in the calendar year 1937. Agricultural products accounted for £5,200,000 in the September agreement, the German wool purchases to the value of £3,760,000 constituting easily the main item. In the middle of May 1939, however, the amount of the agreement was increased to £6,700,000 of which £5,475,000 is to be accounted for by agricultural products, the German wool purchases being increased to £4,000,000 under the amended agreement. Payment will be made in German goods.

In the wool season 1938-39 Germany purchased about 40 per cent. of the Union's wool output, and is now the chief market for the wool exports of the Union. Critics have wished to attribute the decline in wool prices to the German-South African Agreement, but the Secretary of State for Agriculture, Dr Viljoen, pointed to the sure market guaranteed by the Agreement, and declared that the decline in wool prices must be attributed to the recession which has taken place in the world markets. At the annual congress of the "National Woolgrowers' Association" (Cape branch), held at the end of March 1939, it was resolved to request the Government that the payment facilities granted to Germany by the terms of the Agreement be extended also to the other wool-importing countries.

Further trade agreements are in course of preparation, and negotiations are already being carried on between the Union and the United Kingdom, as also with France, Brazil, Poland and Egypt.

The new agreement with the *United Kingdom* is to contain a modification of the preferential tariffs accorded at the Ottawa Conference, the value of which has been adversely affected by the conclusion of the Anglo-American Trade Agreement of November 1938. The lowering of the import duties on American apples, pears and preserved fruits promised by the United Kingdom means for the South African fruit-growers and exporters to Great Britain the loss of their former profit margin. In other respects, however, the Anglo-American Trade Agreement was welcomed in South African economic circles. Much is hoped for especially from the lowering of the import duties on British woollen goods promised by the U. S. A., which is expected to stimulate the Union's wool exports. Favourable consequences are also expected from the promised co-operation of American fruit exporters with the Empire Fruit Council as regards the export of fresh, dried and preserved fruit, which is so important for South Africa.

The Agreement with *France* is to be on a far broader basis than the one concluded in August 1935. Negotiations are also in process with *Morocco*.

Most-favoured-nation treaties are to be concluded with *Brazil* as also with *Poland*. Poland purchases wool, skins, hides and wattle bark from the Union, yet until now there has never been a commercial treaty between the two countries.

Market regulations under the Marketing Act.

The Marketing Act of June 1937 forms the basis of a carefully planned system of regulation of agricultural marketing. The production and sale of the main agricultural products are controlled and in the case of their sale to some extent monopolised by marketing boards either already existing or shortly to be created, which are all subordinate to the National Marketing Council ⁽¹⁾. The Law provides for the drawing up of a series of marketing schemes, the plans for which are first to be laid before the Minister of Agriculture for his provisional approval, then to be passed to the Marketing Council for discussion, and after examination of all proposed suggestions and objections to be presented to the Governor-General for final approval.

Already in the second year of its existence a modification of the Marketing Act proved to be necessary. Numerous difficulties arose, e.g. as regards the transfer of funds from the earlier boards to the newly-founded Board, but mainly because the wording of the Law made an effective control of the producers and the importers difficult.

Marketing Amendment Act. — For this reason the Marketing Amendment Act ⁽²⁾ of September 1938 includes a wider definition of "producer", which for the purposes of any marketing scheme under the Act now includes those who import or process a product. Thus for the purposes of the marketing scheme a product imported into the Union counts as a product of the Union, except where expressly stipulated to the contrary. However, the distinction between import duties and the levies imposed on the products of the Union for the benefit of the Boards is still preserved. The powers of control of a Board are extended from production to include also consumption, which may be subjected to the quota system or even prohibited altogether within the framework of a marketing system. Furthermore the Boards set up under the Marketing Act are empowered to collect together the funds of any former board or boards of the same branch of the national economy in a special Fund for the furthering of the marketing system where they may be used at discretion.

Maize Control Scheme. — Under the maize scheme of last year ⁽³⁾ the Board imposed a levy on all maize sales within the country, which was originally fixed at 1 shilling and later increased to 18 pence per bag. From the funds thus accruing the Board granted export subsidies calculated according to overseas prices, which subsidies were originally fixed at 27 pence per bag, then at 39 pence per bag, and since February of this year at 30 pence per bag. Of last year's harvest, of 19 million bags of 200 lb., 4.5 million were exported under permits granted by the Board, whilst 5.5 million bags were sold in the home market, the rest remaining with the producers. However, the harvest and consequently the export surplus had been underestimated at

⁽¹⁾ See the May 1938 number of this Chronicle, p. 255

⁽²⁾ See *The Union of South Africa, Government Gazette*, No. 2572 of September 30, 1938. The Law has retroactive effect as from the entry into force of the Marketing Act (No. 26 of 1937). For a criticism see the reports of the Secretary of State for Agriculture, Dr. VILJOEN, and the Secretary of the Meat Control Board, J. R. McLOUGHLIN, together with the reply of Prof. RICHARDS in the *South African Journal of Economics*, September 1938, pp. 280-312.

⁽³⁾ See the *Government Gazette* No. 2537 of July 17, 1938. Compare description of contents in the May 1938 number of this Chronicle.

the beginning of the season, so that ultimately the revenues of the Board proved insufficient for the payment of both the export subsidies and the premiums to the farmers, with the result that it became necessary to appeal for the assistance of the State.

As a harvest of about 30 million bags is expected for 1939 with an export surplus of 15 million bags, whilst home consumption only amounts to some 5 or 5.5 million bags, and prices on the world market are falling, it clearly became necessary to set up a new system for the collection of the internal levies and the payments to producers and exporters.

Under the new maize plan, known as the "Mealie Control Scheme" ⁽¹⁾, the exporter no longer receives any specially calculated export subsidies, but the Board restores him the amount of the levy for the same quantity of maize when bought from the producer. Only such dealers as are registered with the Board are allowed to buy maize from the farmers. The Board retains the right to subject maize exports to quotas by the grant of permits. The Maize Levy Fund receives in addition to the already mentioned levy a small processing tax. The surplus remaining to the Board at the end of the season when all payments to exporters have been made is paid out to the maize growers by the Board in the form of premiums calculated on a sliding scale according to the amount sold by the producer. However, it is intended to fix an upper limit above which the grower is no longer entitled to such premiums. A further innovation in favour of the small farmers, who must mostly sell their produce already at the beginning of the season, empowers the Board to pay such growers in advance a certain fraction fixed at its own discretion, of the premiums which will be due to them within the course of the same financial year already at the time when they affect their sales. Growers in the Native Reserves do not receive premiums, as most of the coloured agriculturists produce only for their own consumption; but a special account will be opened in favour of the natives.

In short, the grower receives the net price prevailing in the world market, while home consumers pay a price above that of the world market.

Wheat Control Scheme. — The carrying out of the Wheat Control Scheme ⁽²⁾ is entrusted to the Wheat Industry Control Board, which was first set up in 1935 but has recently been reconstituted. It is composed of 18 members nominated by the Governor-General, amongst whom are to be found representatives of the wheat-growers and wheat-processors of every sort and also a representative of the consumers from the Consumers' Advisory Committee set up by the Marketing Act. The functions of the Board have, however, been somewhat limited in comparison with the preliminary plans of the first half of 1938. The powers to direct exports to particular foreign markets, to impose a levy on sales and to set up an equalisation fund have been abolished. The Board, however, imposes a unified levy on each bag of ground or otherwise processed wheat, which already at the time of the decreeing of the Scheme was fixed at 1 shilling per bag of 200 lb. Up to 35 bags per year for the use of the grower remain duty free. Registration is compulsory for all millers and other processors of wheat or wheaten products. The Board may require a report on wheat matters from anyone engaging in the production, processing or selling of wheat. Furthermore

⁽¹⁾ See the text of the law which entered into force on May 1, 1939 in the *Government Gazette* No. 2629 of April 21, 1939. Compare *Farmer's Weekly*, May 3, 1939, p. 535.

⁽²⁾ *Government Gazette*, No. 2574 of October 5, 1938, entering into force on October 5, 1938. See *Farmer's Weekly*, October 12 and October 19, 1938.

the Board is empowered to use at its discretion the funds received for the development of the production and sale of wheat, to grant loans, to buy up and store wheat in any quantities thought fit, to fix maximum and minimum prices and to monopolize the right to purchase wheat. Already in November wheat producers were forbidden to sell their wheat to anyone but the Board. ⁽¹⁾.

Dried Fruit Scheme. — The Dried Fruit Scheme ⁽²⁾ was enacted with only slight modifications in the form described in the May, 1938 number of this Chronicle. The director of the economic section of the Ministry of Agriculture, however, pointed in his annual report to the pressing necessity of a more closely knit organisation in order to restrict the excess production which had risen during the years of the revival, and to see to the improvement of the quality of the fruit. Last year in the principal foreign markets dried fruits from the Union were valued at 5 to 10 shillings per hundredweight (112 lb.) less than those from other producing countries ⁽³⁾.

Tobacco Marketing Scheme. — The Tobacco Marketing Scheme was also adopted very much in the form proposed last year ⁽⁴⁾. Owing to its closely-knit organisation tobacco indeed belongs to the most firmly established branches of Union agriculture.

A decision of the Board has prohibited further duty-free imports of Turkish tobacco, as there still remain considerable stocks of the home crop from last year.

Meat Marketing Scheme ⁽⁵⁾. — The Live Stock and Meat Industries Control Board set up in 1934 is to be expanded to 18 members, all to be nominated by the Governor-General. The Board levies a slaughter tax on cattle, sheep and pigs. Live animals which are imported into the Union for subsequent re-export and are slaughtered in the Union are exempt from this tax. Of the revenue thus accruing a certain percentage (60 per cent.) fixed by the Board and approved by the Ministry will be used for the payment of export subsidies. The Board is further empowered to pay premiums on quality to the producers of high-value slaughter-cattle for home consumption, and to grant breeders and associations of breeders loans up to a proportion of the export value to be determined by the Board. It can limit the right of sale for live animals and for the meat trade to possessors of a trading permit issued by the Board, and can introduce compulsory registration for the suppliers of live cattle to the districts under its control. For the registration of home and export prices an Export and Stabilisation Fund is to be created, but the Board is not, however, empowered to fix maximum or minimum prices.

Chicory Roots Marketing Scheme. ⁽⁶⁾. — The control of the marketing of chicory roots, the production of which is limited to three adjoining districts, is reserved exclusively to the producers. Only planters elect the Board or are eligible for election to it.

⁽¹⁾ *Government Gazette*, No. 2585 of November 11, 1938.

⁽²⁾ Text in the *Government Gazette*, No. 1962 of October 28, 1938. Entered into force on December 1, 1938.

⁽³⁾ Annual report of the Chief of the Division of Economics and Markets, Dr. GROSSKOPF in *Farmer's Weekly* January 11, 1939, p. 1145.

⁽⁴⁾ Text in *Government Gazette*, No. 2617 of March 21, 1939, entering into force on April 1, 1939. See the description in the May 1938 number of this Chronicle.

⁽⁵⁾ Only provisionally approved by the Minister. For text see the *Government Gazette*, No. 2580 of October 28, 1938.

⁽⁶⁾ Only provisionally approved. See the *Government Gazette*, No. 2583 of November 4, 1938.

The financial powers and rights of control are of the usual type. The Board is empowered to impose a levy per 100 lb. of chicory roots produced according to a sliding scale as also export duties, to introduce compulsory registration for producers and to limit the sale of the product through certain authorised channels.

Schemes in preparation. — The enactment of marketing schemes for dairy products ⁽¹⁾ has so far had to be postponed. Difficulties arise mainly owing to the over-expansion of the dairy industry during the last 10 to 15 years, as a consequence of the large-scale speculation resulting from the especially wide gap between summer and winter production and prices. The Dairy Industry Control Board founded in 1930 proved unable to check this over-expansion, despite its prohibitions on new entries into the industry. Within the framework of the new marketing plans the struggle seems to be centering around the authorisation of the Board to limit the number of uneconomic and superfluous concerns by compulsory purchase. The productions of dairy butter has risen by 10 million lb. from 1930 to 1938. The portion of the selling price to consumers received by the producer amount to 50-55 per cent. in the case of butter, to 30-40 per cent., for cheese, and (in Natal) to 25-30 per cent. for milk.

The outline of a marketing scheme for fruits coming from deciduous trees ⁽²⁾ was passed to the Deciduous Exchange, that for a wool marketing plan to the Wool Council ⁽³⁾.

Miscellaneous:

Reduced transport charges. — The Finance Minister in his budget speech of March 1939 promised for the ensuing financial year a reduction in railway freight charges for agricultural products, the railways to be compensated by a grant of £800,000 from the State.

Loans for fruit production. — Since the summer of 1938 loans up to £150 and repayable within five years have been granted by the State to impoverished farmers in order to maintain fruit farms which have become unprofitable since 1937. The loans for the development of export comprised within the £150 will not be paid in cash but in the form of orders on the Railways and Harbour Administration ⁽⁴⁾.

Agro-economic Survey. — The agro-economic survey carried out by the State is to lead to a division of the Union into 22 agricultural districts, each such district being composed only of areas of the same climate and type of soil. Only when this undertaking has been completed will it be possible to aid farmers with better advice and to check the flight from the land. The survey was begun some years ago and has as yet been applied to 11 districts.

Purchase of land for coloured people. — At the opening of Parliament in the beginning of February the Governor-General announced the coming revision of the Native Trust and Land Act of 1936. Lands were already being bought for the natives in order to abolish the small scattered reserves and to compensate the natives with lands elsewhere, thus creating several large contiguous areas for natives and for whites.

⁽¹⁾ See this Chronicle for May 1938, p. 260; also *Farmer's Weekly*, October 19, 1938, p. 246. —

⁽²⁾ *Farmer's Weekly*, October 12, 1938, p. 174. — ⁽³⁾ Text in *Organised Wool Farmer*, Wool Council Prudential House, Pretoria. — ⁽⁴⁾ *Farming in South Africa*, November 1938, p. 424.

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(*) *List of abbreviations*: bihebd. (biweekly); bimens. (twice monthly); bimestr. (every two months); déc. (every ten days); étr. (foreign price); fasc. (copy); hebdom. (weekly); int. (home price); irr. (irregular); mens. (monthly); n° (number); N. S. (new series); p. a. (per annum); q. (daily); sem. (half yearly); s. (series); trihebd. (every three weeks); v. (volume); trim. (quarterly).

N. B. — Between brackets [/] are given translations and explanatory notes not appearing in the title of the review.

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Dott. VALENTINO DORE, *gerente responsabile.*

VINE-GROWING IN GREECE

SUMMARY: 1. General considerations. — 2. Vines for wine production. — 3. Vines for table grapes. — 4. Vines for grapes for drying. — 5. Conclusions.

Although vine-growing is one of the most important branches of Greek economic activity it has not yet been the subject of a complete general scientific study. Thus the only materials other than official statistics available to the author in preparing this article were special publications and information collected together either by himself personally or by the Institute of Rural Economics and Politics of the University of Salonika, of which he is the Director, and such unpublished material as viticultural specialists have been good enough to place at his disposal ⁽¹⁾.

As the analysis of these various sources showed the author that there were serious discrepancies in the material (statistical and other) he chose in each case the data he considered most exact and, where necessary, made corrections.

I. — General considerations.

Since ancient times wine-growing has been very widespread in Greece, where the natural conditions are particularly suitable. The vine is grown for production of wine and must, of table-grapes and of raisins, currants, etc.

Methods of cultivation.

In the regions where the vine has been grown since ancient times (Peloponnese, Crete, etc.) so that there is a vine-growing tradition, cultivation is carried out under very good technical conditions and with great care.

In the other regions, and in particular in the provinces annexed during the last thirty years, a distinction must be made between the native or newly established refugee vine-growers with a vine-growing tradition, and those growers who are new to the work. The old native growers and also such refugees as were growers in their old homes in Eastern and Northern Thrace, Smyrna etc. cultivate the vine in a very satisfactory manner. Certain of the new growers, on the other

⁽¹⁾ The author has the pleasant duty of citing specially the following among his collaborators: Messrs. Roussopoulos, Coutsomitopoulos, Pipinos Tzeveleakis and above all his old pupil and collaborator Ch. Mitakides.

hand, have not the necessary knowledge and often use defective methods. The same can be said of most of the farmers for whom the vine is of secondary importance.

What is not properly done, in certain districts, is the hoeing. This is neglected, either on account of ignorance of its usefulness, as is sometimes the case with new growers, or by reason of shortage of labour in relation to the size of the vineyard, or as a result of the high cost of this work to the great landowners employing wage labour.

Another fault to be found, above all in the new provinces, is the unsatisfactory way in which the vines are dressed. This is due to the fact that, as yet, no study has been made of the system of dressing and of the variety of vine best suited to the respective districts.

Furthermore, the methods of packing, transport and preservation of the products of the vine are often defective. For example, very deep baskets are generally used for carrying grapes, with the result that the lower layers get crushed or bruised; and as the grapes thus injured are not always removed the quality and the appearance of much of the product is thus spoilt.

Area cultivated.

The total area of vineyards in Greece was 116,845 hectares in 1914. At the time of the agricultural census of 1929 it was 196,134 hectares of which 59,006 hectares were for grapes for drying and 11,930 hectares for table grapes.

According to the most recent official figures the area of vineyards was about 264,931 hectares in 1937; this is about 10.96 per cent. of the total cultivated area of Greece.

The areas devoted to the various types of production were:

Vines for wine	155,984	hectares	58.88 %	
Vines for table grapes	20,688	"	7.81 %	
New vineyards	10,410	"	3.93 %	
Vines for currants	64,514	"	24.35 %	} 29.38 %
Vines for sultanas	11,185	"	4.22 %	
Vines for rozakis	2,148	"	0.81 %	

Thus over half of the area of vineyards in Greece is devoted to the cultivation of grapes for wine, such cultivation being found throughout the country except in very high districts. The area devoted to the production of grapes for drying is limited almost entirely to the Peloponnesus (currants and sultanas), to Crete (sultanas and rozakis) and to the Ionian islands (currants). Vineyards for the production of table grapes are generally small and are to be found scattered throughout the country, but especially near the urban centres and in places with good communications and transport facilities.

Of the area of vineyards devoted to the production of grapes for drying 82.87 per cent. yield the small black variety without pips known as currants, 14.37 per cent. the light coloured variety without pips known as sultanas, and 2.76 per cent. rosaki and other varieties.

Output.

The annual output of must has varied in recent years between 190,000 metric tons in 1936 and 490,000 tons in 1935, the annual average for the ten years 1928-1937 having been about 311,000 tons.

The production of table grapes rose from 35,000 tons in 1928 to 65,000 in 1932 and to 103,000 tons in 1935, but fell again in 1936 to 45,000 tons whilst in 1937 it was 72,500 tons, the average for the ten years 1928-1937 having been about 52,000 tons.

The output of currants has varied in recent years between 82,000 tons in 1931 and 176,000 in 1935, the annual average for the years 1928-1937 having been about 148,000 tons. The output of sultanas ranged from 11,000 tons in 1928 to 29,800 in 1935, with an annual average of 20,900 tons. The output of rozaki raisins has been between 3,000 and 6,900 tons, the annual average having been 5,000 tons.

Pests and diseases.

Phylloxera. — This pest appeared in 1898 in the region of Salonika and later extended over the whole of Macedonia. The regions affected at the present day are Macedonia, Thrace, the Aegean islands and Thessaly. Old Greece is not affected apart from the department of Trikkala and the regions of Tyrnavo and Agyia in the department of Larissa.

Extremely severe measures have been taken to preserve from infection the regions as yet free from this pest (¹). The vineyards destroyed in affected districts have been remade with American stock. In many regions various errors were committed in the past, especially in the use of American varieties without previous examination of the soil and of the affinity of the stock with the variety of the native graft. In order to prevent the repetition of these errors and to avoid failures the Ministry of Agriculture's Office for the Fight against *Phylloxera* has long been conducting studies of the adaptation of American varieties to the different soils of the various regions of the country, and of their affinity to the native varieties.

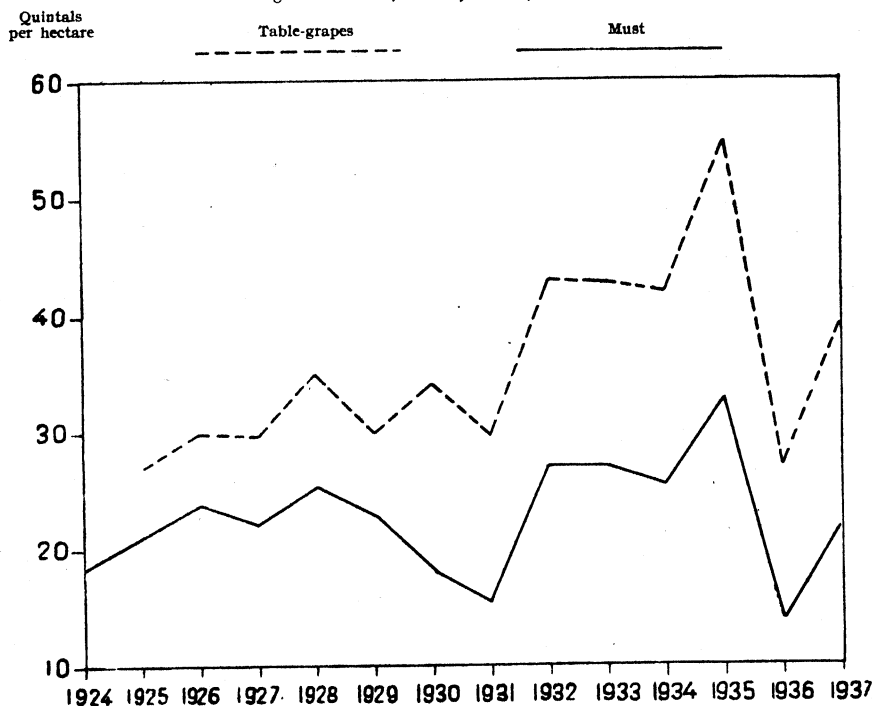
For this purpose and in order to ensure the production of a sufficient number of American stocks thirteen nurseries of American vines have been established in the various regions; four of these are managed by the *Phylloxera* Office and nine are subsidiary undertakings of the various agricultural stations and agricultural schools. There are also fourteen private nurseries, mostly in Macedonia, which are under the control of appropriate Government offices. An effort parallel to that of the State has been made since 1928 by the Currant Institute of Pyrgos. The varieties of American vines used (about twenty) are: *Riparia*,

(¹) Law No. 214, 1914: "concerning protective measures against *phylloxera*". This law was passed in order to prevent the spreading of *phylloxera* in old Greece at the time of the annexation in 1912-1913 of the new provinces which were affected by this pest. The law, modified at different times, continues in force.

Rupestris, *Berlandieri*, and hybrids of *Berlandieri* crossed with *Riparia* and *Riparia* crossed with *Rupestris*.

The law requires that no new plantations shall be made without a special permit of the Phylloxera Office; the appropriate American variety is indicated in the permit and the use of any other variety is prohibited.

GRAPH I. — Average Yields of Vineyards for Must and Table-Grapes.



Other insects. — *Eudemis* is the cause of considerable damage especially in the regions of Elis, Aegium, Halykai, Volo and Skiathos ⁽¹⁾. The campaign against this insect is carried out by the Phytopathological Office of the Ministry of Agriculture.

There are other insects which attack the vine in Greece ⁽²⁾, but all these are fairly effectively combated, thanks to the efforts of the appropriate Government

⁽¹⁾ *Cochylis* is not a serious danger.

⁽²⁾ Serious damage is caused by *Otiorynchus*, *Dactylopius vitis*, *Anomala vitis*, cockchafer, flea-beetle and *sphinx elpenor*. This list is in order of importance. It is above all the first two and particularly the first which are serious dangers. *Erinos* is also very common, but, as usual, the damage it causes is not great. *Anobium paniceum* attacks stored dried-grapes, especially those packed in cardboard boxes.

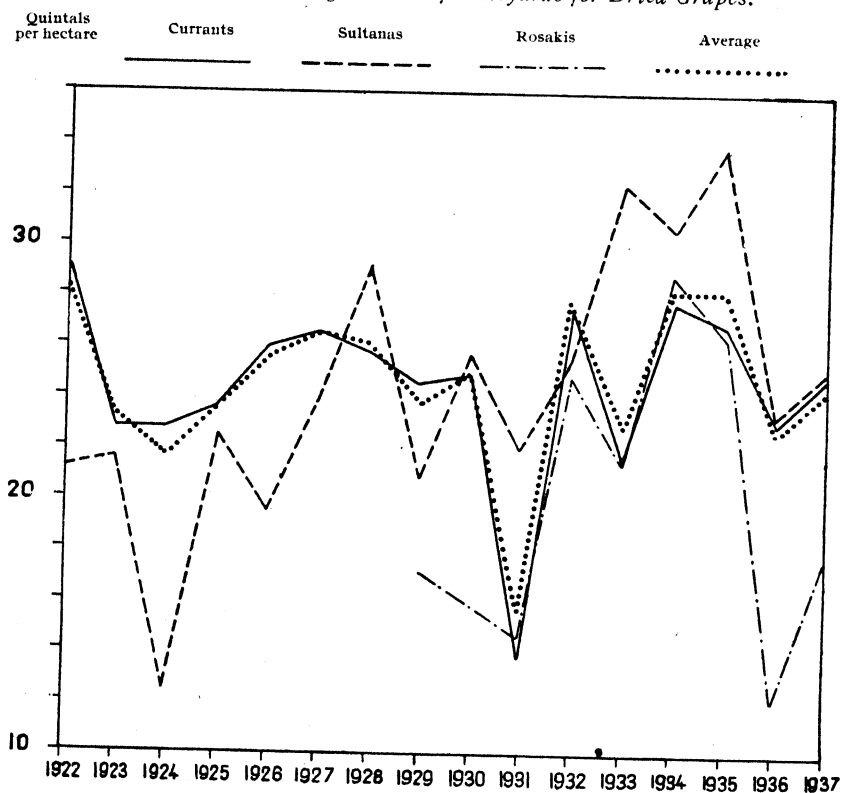
offices which have done much to spread knowledge of the most effective methods, preparations and instruments (sprayers).

Other diseases. — Serious damage is often caused by mildew and by oidium, which are to be found throughout the country. The combating of these pests by the use of sulphur and copper sulphate is common.

Yield.

During the fourteen years 1924-1937 the average yield of vineyards for the production of must was 2,259 kilogrammes per hectare; whilst of vineyards for table grapes, during the thirteen years 1925-1937 the average yield was 3,552 kilogrammes per hectare.

GRAPH 2. — *Average Yield of Vineyards for Dried-Grapes.*

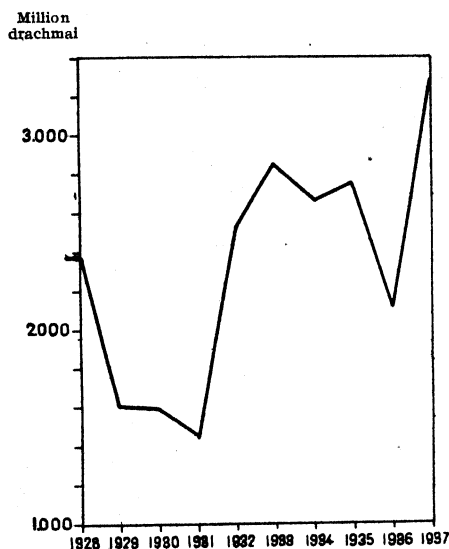


The average annual yields of currants and sultanas during the sixteen years 1922-1937 were 2,446 and 2,432 kilogrammes per hectare respectively; whilst the corresponding yield of rozakis during the seven years 1931-1937 was 2,080 kilogrammes.

The yield of the vine in Greece is in general fairly satisfactory. The quality of the products is usually good, and in the case of dried grapes and certain table grapes even excellent.

Value of output.

GRAPH 3. — *Value of Output from Vines.*



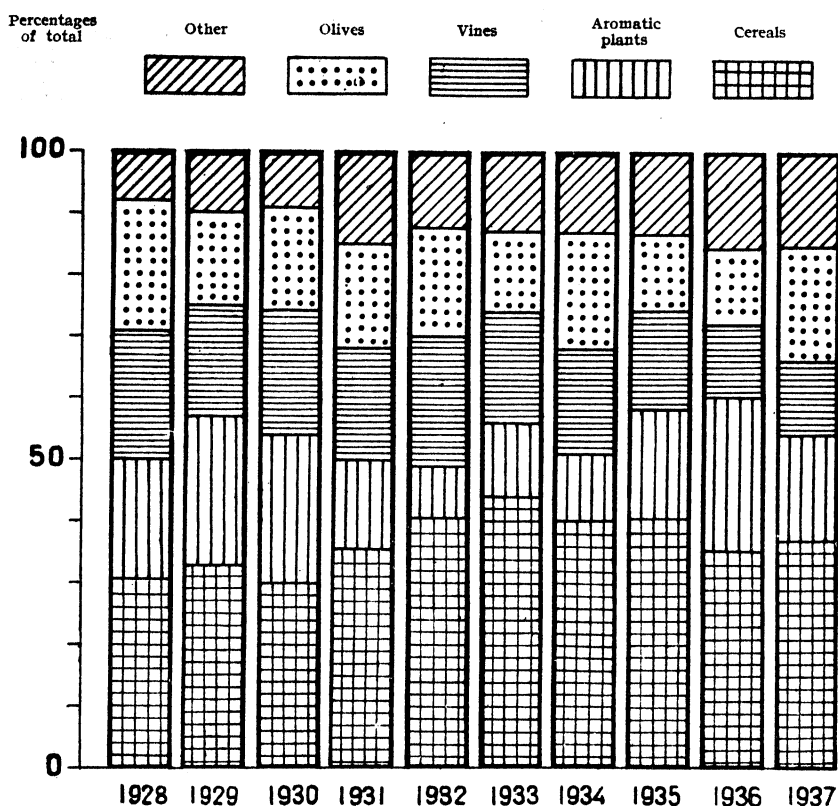
The average annual value of the output from vines in Greece has thus been about 2,313 million drachmai, of which 1,299 million drachmai *i. e.* 56.17 per cent. is derived from dried-grapes, 850 million *i. e.* 36.76 per cent. from must, and 164 million, *i. e.* 7.07 per cent. from table grapes.

Place of vine-growing in Greek agriculture.

The vine is the third in importance of the sources of agricultural income, the value of its products being only slightly less than that of the two most important sources, cereals and industrial and aromatic plants respectively.

Exports.

The annual average value of the exports of products of the vine during the ten years 1928-1937 represented 24.69 per cent. of the total value of Greek exports and 27.98 per cent. of the total value of the exports of agricultural products.

GRAPH 4. — *Composition of the Value of Greek Agricultural Output.**Exports of Vine Products.*

(Million drachmai).

	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1928-1937	Per cent.
Must	6	31	25	11	15	16	9	12	9	12	14.6	0.94
Brandies	18	23	20	15	13	19	47	29	25	50	25.9	1.67
Wines	500	568	248	170	163	309	154	147	184	215	265.9	17.13
Table grapes.	15	32	34	21	27	38	51	48	44	48	35.8	2.31
Dried grapes:												
Currants	960	876	782	750	1032	1085	1104	875	934	979	937.7	60.42
Sultanas	162	178	185	184	267	257	316	358	369	445	272.1	17.53
Total	1661	1708	1294	1151	1517	1724	1681	1469	1565	1749	1552.0	100.0

Costs of production.

Costs of Production of Currants

(Drachmai per hectare).

	<i>Plains</i>	<i>Hills</i>
(1) Cultivation expenses:		
(a) Propping and unpropping	550	450
(b) Cleaning (before cutting) and cutting	900	800
(c) Digging	2,300	1,900
(d) Hoeing	1,200	650
(e) Labour for copper sulphate spraying ⁽¹⁾	450	300
(f) Labour for treatment with sulphur ⁽¹⁾	350	250
(g) Incision, cutting, thinning out, etc.	1,300	1,200
(h) Spreading out and arrangement of branches	550	450
(i) Interest charges	380	300
	7,980	6,300
(2) Costs of material:		
(a) Wooden gourds	500	420
(b) Copper sulphate ⁽¹⁾	900	700
(c) Sulphur ⁽¹⁾	600	500
(d) Interest on these sums and depreciation charges on dead stock	450	400
	2,450	2,020
(3) Harvesting	1,200	1,200
(4) Drying	300	300
(5) Transport and stocking	280	450
(6) Watchman	100	100
(7) Other costs	350	250
(8) Depreciation of the vineyard over 35 years at 5 per cent. on a value of 100,000 drachmes	6,100	6,100
	8,330	8,400
	18,760	16,720

⁽¹⁾ The sums spent on spraying with copper sulphate are especially heavy in the damp regions, in Western and Northern Greece; whereas in the warm and dry regions, for example in Attica, these expenses are lower, and the use of sulphur is relatively more important.

The average costs of production per hectare are thus about 17,740 drachmai. The gross return averages about 21,000 drachmai ⁽¹⁾, of which 20,550 drachmai are derived from currants and 450 from vine shoots (resulting from the cutting). The net return is thus about 3,260 drachmai.

It is scarcely necessary to say that the costs of production and the gross and net returns vary greatly from district to district and from year to year.

⁽¹⁾ The average yield is 2,446 kilogrammes per hectare and the average price 8.4 drachmai per kilogramme, this price, however, varying greatly according to quality.

The costs of production on vineyards for sultanas are from 5 to 8 per cent. higher; but so are also the gross and net returns. On vineyards for must the expenses are about 10 per cent. lower than on those for currants. The cost of production on vineyards producing table grapes are about the same as those on vineyards for currants; but the gross and net return are very much greater.

Of all forms of viticulture, the production of table grapes is the most remunerative.

Vine-growing by small farmers.

The great majority of the vineyards belong to small farmers working with their families, so that the income of the farming family is much greater than the net return calculated above for vines for dried grapes, since there are no wages to be paid. A typical farm having a vineyard of 1.2 hectares valued at 132,000 drachmai (110,000 drachmai per hectare) and a dead stock (sprayer, sulphur sprinkler, baskets, vine-props etc.) valued around 3,000 drachmai has to meet only the following expenses:

(1) Cost of material (sulphur, copper sulphate, gourds) and other expenses (watchman)	2,500	drachmai
(2) Cost of living of the family	16,000	»
(3) Amortization of the dead stock at 8 per cent. over 8 years on 3,000 drachmai	522	»
(4) Amortization of the vineyard at 5 per cent. over 35 years on 132,000 drachmai	8,052	»
	<u>27,074</u>	

The gross return being $21,000 \times 1.2$ or 25,200 drachmai there is a loss of 1,874 drachmai if account is taken of interest and amortization of capital. But in spite of this loss, due to the difficulties in marketing and to the resulting low prices, vine-growing is very profitable to the small Greek farmer since it gives him a greater number of working days – 160 to 200 in our example – than does any other branch of agriculture, except tobacco.

Social and economic importance.

Vine-growing is a very important branch not only of Greek agriculture but of the economic activity of the country as a whole. The vine covers 10.96 per cent. of the total cultivated area, whilst the value of its products represents 16.54 per cent. of the total value of agricultural products and about 25 per cent. of the value of the country's exports.

Vine-growing is particularly suited to intensive cultivation, and is therefore of special importance to a country such as Greece where holdings are small but labour abundant. The natural conditions of the country also being favourable, the gross and net returns from the vine are high.

There are certain districts where vine growing is a necessary evil, the small area of the fields and the conditions of agricultural production in general excluding the possibility of replacing the vine by some other crop which would ensure a livelihood to farming families.

II. — Vines for wine production.

Area and output.

Production of Must.

Year	Area (Hectares)	Output (Metric quintals)	Value of output (Drachmai)
Average:			
1914-17	136,292 (1914)	3,252,869	95,535.972
1918-22	134,482 (1918)	2,251,214	189,428,761
1923-27	127,212 (1923)	2,280,825	562,628,504
1928-32	121,517 (1928)	2,718,714	734,715.655
1933-37	142,288 (1933)	3,535,664	965,344.495
	155,984 (1937)		

The decrease between 1914 and 1928 of the area under vine for the production of wine is to be attributed mainly to phylloxera and other causes such as the War which led to the destruction of vineyards. The increase since 1928 has been due to the restoration of the vineyards and the new plantations resulting in large part from the efforts of the Colonisation Offices.

The yield of wine being on the average 9/10 of the must used, Greece produces about 3 million hectolitres of wine. It takes eleventh place in the list of wine-producing countries; the first place is occupied by France (exclusive of Algeria) with about 50 million hectolitres, the second by Italy with 34 million and the third by Spain with about 16 million ⁽¹⁾.

The varieties of wine grown in Greece for the production of wine are very numerous. Unfortunately they have not been sufficiently studied ⁽²⁾.

Wine-making.

Organisation. — Two-thirds of the output of grapes for wine is made into wine by the farmers themselves; the remaining third is converted industrially

(1) Follow: Algeria with about 15 million, Romania 10.7 million, Argentina 7.9, Portugal 7.8 U. S. S. R. 5, Hungary 4.3 and Chile, which occupies tenth place with 4 million (1937).

(2) Among these varieties the best known are *Savvatiaho*, *Rhoditis*, *Korithi*, *Phileri*, *Rosaki*, *Rombola*, *Assyrtikon*, *Mandylaria*, *Mavrodaphni*, *Moschoudi*, *Moschato*, *Kountoura*, *Mavroudi*, *Asproudi*, *Voidommati*, *Skylopnichtis*, *Vradyno*, *Xynomavro*, *Moschomavro*, *Batiki*, *Goritsano*, *Avgoustoulidi*, *Kolli-niatiko*, *Nausseiko*, *Monemvassia*, *Polianitiko*, *Liatiko*, etc.

either in the establishments of industrial concerns or in cooperative cellars or, in the case of fresh Corinth grapes, in the cellars of the Central Currants Office ⁽¹⁾. The country has reason to be proud of this industry as its organisation equipment, plant and methods are each the last word in science and technique. The small wine-growers, on the other hand, usually lack technical knowledge, have insufficient means, and work on a very small scale. This position has its drawbacks the principal of which is the resulting difficulty in improving a large part of the output and in standardizing all Greek wines.

The number of wine-growing *cooperatives* is about ninety. About twenty of these are inactive and only four are of outstanding importance. These four are the Wine-Growers Cooperative of Attica, which has its chief office in Athens and possesses 263 concrete vats capable of holding 110,000 hectolitres; the Communal Wine Cooperative of Markopulo, also in Attica, which possesses vats of a capacity of 30,000 hectolitres; the Wine Cooperative of Chalcis which has its chief office in Chalcis in the island of Euboea, with vats of a capacity of 40,000 hectolitres; and the Union of the Wine Cooperatives of the Island of Samos, having vats of a total capacity of 40,000 hectolitres.

The *Central Currants Office* ⁽²⁾ with its chief office in Athens has 430 reinforced concrete vats situated in various places in the Peloponnesus with a capacity of 260,000 hectolitres of must.

There are about twenty *wine concerns* handling vine products; their staff numbers about 1,500 ⁽³⁾.

A Trust for the export of wine and alcohol has been formed in Athens by the seven principal concerns and given the name of "Bacchus Company".

Wines.

Since ancient times Greece has produced all sorts of wines from dry white wines to strong liqueurs.

There are two categories of dry wines; the first comprises wines produced in the warm regions of the south and which are very alcoholic, lack aroma and body and are good as mixing wines; the other, comprises the wines produced in the colder regions of the north, which resemble the wines of colder countries, and contain less alcohol but possess greater acidity, aroma and body, and can be drunk neat and without admixture.

Greece with its warm climate and by reason of the nature of its soil and of the large variety of vines grown is an ideal country for the production of sweet wines. Greek sweet wines have been famous since ancient times.

⁽¹⁾ Thus in 1935 of about 5 million hectolitres of must almost 1.5 million were converted industrially (including 300,000 hectolitres of must from Corinthian grapes).

⁽²⁾ The nature, objects, organization, and resources of this office are described in Section IV, "Vines for dried grapes", below.

⁽³⁾ Part of this staff, however, deals also with other products principally foodstuffs, oils, soap, etc.

Dry white wines. — The white wine most generally drunk within the country is the resinous white wine called *Retzina* ⁽¹⁾. This is a light wine (11° Gay-Lussac approximately) with low acidity and small dry extract content. It has to be consumed during the year in which it is produced and cannot be aged. The best resinous wines are those of Attica (especially those of Messoghion, Aegina, and Salamis) of the island of Euboea and of the Peloponnesus ⁽²⁾.

Non-resinous dry white wines of very good quality are produced in the Ionian and the Aegean islands; such are the wines of Corfu, of Cephalonia (*Rombala* which has an excellent strong aroma) of Paros, Santorin, Samos etc. This category comprises also the wines of *Dekalia*, *Tour la Reine*, *Hymette-Camba*, *Demestica*, *Marco*, the wines of Euboea island, (Chalcis, Aliverion) of Argolis, Arcadia, (Tripolitza and Tegea where champagne is made as well) Messenia, etc. Some of these wines are light and have an excellent aroma.

Red wines. — This category comprises chiefly the wines of Macedonia; *Niausta* wines which are famous throughout the country and have the valuable property of acquiring an excellent aroma by ageing ⁽³⁾; *Hegoumenissa*, red *Siatista* which are similar to the first but of a slightly inferior quality; *St. Panteleimon* (Florina) and *Amyntaion*, which are lighter than the others and have a smaller dry extract content, but greater acidity. The red wine of the island of Levkas which is rich in colour is a good mixing wine. Other wines of smaller importance are produced in different parts of the country.

Sweet table wines. — The *mistelle* of Samos, the Peloponnesus, Corfu and Crete are famous. They usually measure 10° Beaumé and 16° Gay-Lussac. The sweet white wines of Samos ⁽⁴⁾ are world famous as is also the red *Maṽrodaphni* of Patros and Corfu which is greatly appreciated particularly in Germany. The yellow amber wine of Siatista ⁽⁵⁾ is a greatly appreciated vintage; it is sweet, very alcoholic and has a special aroma.

Special wines. — There are several types of special wines, wines for convalescents, aperitive, vermouth, and sparkling wines etc.; pure wines of very good quality produced in the monasteries, etc.

⁽¹⁾ The must is fermented with resin which is admixed up to 6 per cent. After the fermentation the resin is deposited and the freed turpentine comes to the surface and forms a thin coating which preserves the wine from acidification.

⁽²⁾ Resinous wine has been known since ancient times; it was discovered by accident, must having been placed in a barrel made from resinous wood.

⁽³⁾ In three years, under favourable conditions of cellaring, it makes an excellent quality wine.

⁽⁴⁾ Prepared by adding alcohol to half fermented must from a variety of grapes with a strong aroma rich in sugar.

⁽⁵⁾ This comes of white grapes of a special variety. After being gathered the grapes are left in the sun for several days until their yield of must is reduced by 25 per cent. The fermentation is very slow. The wine can be drunk only after being preserved for three or more years. It can be kept for thirty or forty years.

Domestic consumption.

According to official statistics ⁽¹⁾ the domestic consumption of wine is about 25 litres per head per year. In other wine-producing countries it is very much higher; in France 157 litres, in Italy 97, in Spain 67; and even in Switzerland which is a small producer but large importer of wine it is 46 litres. The domestic consumption in Greece might therefore be greatly increased.

Exports.

Greece exports:

(a) Concentrated and sulfited must ⁽²⁾. This product is exported to countries not having vineyards, for the production of wine, brandy, etc., or to countries needing to improve the quality of their wines as regards colour, sugar content, alcohol content, etc.;

(b) *Mistelle* which is used as an admixture or is drunk as it is;

(c) Sweet wines, such as *Mavrodaphni* and the wines of Samos;

(d) Dry wines, mainly white, for mixing.

Of dry wines, red or white, intended to be consumed as they are, there are only a few such as *Tour la Reine*, *Demestica Achaia* which are standardised and therefore exportable. Yet Greece does produce some very good quality wines, such as the *Niausta* wines, which could be exported and would be appreciated abroad if they were standardised and their export properly organised;

(e) Special wines, such as vermouth, the export of which could be greatly increased.

(f) Brandies such as Cognac etc.

All these exports could be greatly increased.

Exports of Must, Wines, Brandies, etc.

Year	Must		Wines		Brandies, liqueurs, other spirits, etc.	
	Quantity (Metric tons)	Value (Thousand drachmai)	Quantity (Metric tons)	Value (Thousand drachmai)	Quantity (Metric tons)	Value (Thousand drachmai)
1928	1,414	5,820	124,457	500,213	573.8	17,774
1929	7,494	31,200	182,366	568,409	601.2	22,680
1930	9,489	25,497	62,769	248,431	475.0	19,783
1931	3,984	10,891	40,473	170,143	383.8	15,381
1932	4,580	15,386	39,123	162,689	259.8	12,954
1933	3,750	15,852	72,213	308,940	309.4	18,770
1934	2,405	9,198	38,444	154,409	631.7	47,128
1935	2,051	12,220	32,514	147,356	441.9	28,901
1936	2,001	9,349	39,041	184,075	413.4	24,683
1937	2,938	12,259	43,067	215,598	703.4	49,849

⁽¹⁾ These figures are not precise by reason of the great difficulty of checking the quantities consumed by producers.

⁽²⁾ The first form has the advantages that it costs less to transport, can be better preserved and does not need to be desulfited.

Must is exported mainly to Great Britain and France ⁽¹⁾, wine, chiefly to Germany, France, Belgium, Luxembourg, the Netherlands, Malta, Italy, etc, brandies, chiefly to Egypt and the United States.

Destination of Exports.

Country	1935		1936		1937	
	Quantity (Metric tons)	% of total exports	Quantity (Metric tons)	% of total exports	Quantity (Metric tons)	% of total exports
Must:						
United Kingdom	2,051	100	1,152	57.57	1,451	49.39
France	—	—	849	42.43	1,449	49.32
Other countries	—	—	—	—	38	1.29
Total	2,051	100 —	2,001	100 —	2,938	100 —
Wine:						
Germany	12,351	37.99	9,953	25.49	17,006	39.48
Belgo-Luxembourg Union	4,051	12.46	4,621	11.84	7,291	16.93
France	2,477	7.61	13,026	33.36	6,163	14.31
Malta	4,204	12.93	4,911	12.17	2,933	6.81
Netherlands	4,204	12.93	4,911	12.57	2,524	5.86
Italy	3,351	10.30	24	0.06	1,346	3.13
Other countries	1,876	5.78	1,595	4.51	5,804	13.48
Total	32,514	100 —	39,041	100 —	43,067	100 —
Brandies, liqueurs, etc.:						
Egypt	286	64.72	270.5	65.44	398.6	56.66
United States	65.8	14.90	68.0	16.46	174.0	24.74
Other countries	90	20.38	74.8	18.10	130.8	18.60
Total	441.8	100 —	413.3	100 —	703.4	100 —

Taxes and tariff protection.

Taxes, levies, and local dues on wine amount to about 0.636 drachmai per kilogramme made up of 0.402 for taxes, 0.078 for regional levies for the benefit of vine-growers protection organisations, and 0.156 for local dues.

There are no bounties on the export of Greek wines. On the other hand there are import duties which are high for countries benefiting from the most-favoured-nation clause and prohibitive for countries to which the conventional tariff applies. The import of must into Greece is temporarily prohibited, and

⁽¹⁾ To France sulfited must, and to Great Britain concentrated must.

the import of wine from grapes, in barrels or in similar containers, is allowed only where there are clearing arrangements or private compensation (without other restriction), while the total quota of imports of bottled wine from grapes and sparkling wine, aperitives and pharmaceutical wine, may not exceed in value 245,000 drachmai per half-year (1938).

Costs of production.

The cost of production of a hectolitre of ordinary wine is approximately:

(a) Cost of must, according to origin and variety	200	—	250	drachmai
(b) Average cost of making wine	40		40	»
Total . . .	240	—	290	»

The sale price f. o. b. varies, according to the origin and variety, between 360 and 450 drachmai; the difference is therefore considerable.

Wine crisis and measures taken by the public authorities.

The great demand for the import of Greek wines into France that arose after the destruction of French vineyards by phylloxera in the year 1878-1893 was the main cause of a considerable increase in Greek vineyards⁽¹⁾.

After 1893, however, the French vineyards were re-established with American stock, and the French import of Greek wines began to decrease. Production in Greece, on the other hand, continued to increase; and in 1908-9 when the new plantations were in full production there resulted a severe wine crisis in Greece which coincided with a world-wide economic depression. Domestic consumption could not absorb the surplus production. The competition of beer, but above all the imposition of a quantitative levy on the export of dried grapes in 1904—the amounts retained were made into wine or alcohol—made the situation worse. The price of wine fell to a very low level, and the vine-growers, who in general devoted themselves mainly to this one branch of agriculture, as well as the country as a whole, in which vine-growing played so prominent a part, suffered greatly.

The State took no appropriate and far-reaching measures to meet this situation, apart from the Law of 1910 which suppressed the land tax on vine-yards.

The situation was alleviated temporarily by the opening up of new domestic markets resulting from the annexation of the new provinces, after the Balkan wars of 1912 and 1913.

The disaster in Asia Minor and the settling in Greece of refugees from this region and from Eastern Thrace obliged the Government to allow, for technical, social and economic reasons, the establishment of new vineyards, which to some

⁽¹⁾ In Levkas alone the area under vine doubled.

extent amounted to no more than the re-establishment of the vineyards of the new provinces destroyed by phylloxera and the wars. However, at the same time the countries importing Greek wines began a policy of tariff protection. The result was a new crisis, less severe but more persistent than the previous one.

The Government now took various measures to improve the situation:

(a) it prohibited the use of dried grapes for the manufacture of must, wines and mistelle for domestic consumption and it allowed the export of must, wine and mistelle so made only by special permission (Decree-Law of September 16, 1924).

(b) it set up the Pan-Hellenic Union of Vine-Growers, a corporation supervising and generally protecting wine production (Decree Laws of May 12, 1926 and November 13, 1927 and Law No. 3501 of 1928).

(c) the recent setting-up of the Vine and Wine Institute which has the duty of making a study of Greek varieties of the vine and of the wines produced in Greece in order to standardize and create types of Greek wines, and of all matters relevant thereto (Decree-Law of August 12, 1937).

(d) it provided for the purchase of wines and must by the Central Currants Office etc. in order to maintain the prices of vine products (Law No. 8 of 1936).

(e) it took certain purely commercial measures (the organization of marketing, the establishment of trade marks, making of commercial treaties, etc.). Two laws are of special importance here: first, the Law of November 30, 1928 on the organization of wine-marketing and the suppression of fraud, and second, the Law of May 28, 1932 on marks of origin.

III. — Vines for table grapes.

Area and output.

In the past the growing of the vine for the production of table grapes was of little importance in Greece; but in recent years it has increased greatly and is therefore worthy of special attention.

Area and Output of Vineyards for Table Grapes.

Year	Area (Hectares)	Output (Metric quintals)	Value of output
1928.	10,078	350,314	101,878,775
1929.	11,930	182,669	46,560,537
1930.	13,172	336,068	100,499,763
1931.	14,042	407,688	114,584,678
1932.	15,450	656,730	156,932,695
1933.	17,495	736,036	188,425,127
1934.	17,595	738,258	220,162,610
1935.	18,813	1,027,955	268,127,987
1936.	20,746	451,190	157,807,118
1937.	20,688	724,807	279,642,473

It can be seen that both the area and the output have been growing at an increasing rate in recent years, both having more than doubled between 1928 and 1937.

Varieties.

The principal varieties in order of date of ripening are: sultanas of Crete which ripen towards the end of July; takhtas of Crete which ripen during the first ten days of August; rozaki and sultanas of Corinth which ripen up to the end of August; rozaki of Archanes (Crete) ripening in September-October; sideritis of Patras and of Euboea, ripening from the end of October till into December.

Exports.

The export of table grapes has varied considerably in recent years. From 5,912 metric tons valued at 15 million drachmai in 1928 both volume and value rose sharply to 8,213 tons worth 32 million drachmai in 1929; in 1931 there was a fall to about the 1928 level of volume the value remaining higher at 21 million drachmai, but there was a recovery in 1932 to 7,975 tons valuing 27 million drachmai. In 1933 a new export maximum was reached of 14,082 tons valued at 38 million drachmai, but since then the volume has decreased, the figures for 1937 being 7,380 tons; the value has however remained near the high level of 51 million drachmai reached in 1934, the figure for 1937 being 48 million drachmai.

Until 1931 Greek table grapes were exported almost exclusively to Egypt.

In that year, on the suggestion of the Agricultural Bank of Greece, the Minister of National Economy in conjunction with the National Bank of Greece, the railway company Athens-Pireus-Peloponnesus (S. P. A. P.) and the State railway company (S. E. K.), decided to form the "Greek Company for the Export of Fresh Fruit and Vegetables", with a capital of 5 million drachmai.

As a result of the work of this company the export of Greek table grapes to other European countries has greatly increased.

Destination of Grape Exports.

Countries	1935		1936		1937	
	Metric tons	Percentage of total output	Metric tons	Percentage of total output	Metric tons	Percentage of total output
Egypt	5,971	55.79	5,050	57.45	3,027	41.63
Germany	2,608	24.37	1,952	22.21	536	7.26
Austria	589	5.50	443	5.04	426	5.77
Czechoslovakia	257	2.40	240	2.73	359	4.86
Switzerland	137	1.28	152	1.74	96	1.31
Poland	876	8.18	578	6.57	926	12.55
United Kingdom	60	0.56	167	1.90	1,704	23.00
Sweden	—	—	142	1.61	150	2.03
Other countries	205	1.92	66	0.75	111	1.50
Total	10,703	100 —	8,790	100 —	7,380	100 —

In 1937 an export bounty was started for table grapes exported to countries with free currencies, for example 3 drachmai per kilogramme on exports to the United Kingdom; this has led to a still further increase in the exports to such countries.

Greek table grapes are appreciated abroad, although the organization of their marketing is still undeveloped, and in spite of the competition of table grapes from Bulgaria and to a lesser degree from Romania and Yugoslavia and even from Turkey.

The considerable efforts of the Government and of the export company with a view to the more rational organization of the export of table grapes, e. g., qualitative selection, proper equipment cold storage trucks, packing, publicity etc. should make possible an increase in the amount exported and the obtaining of satisfactory prices.

Prices.

The price per kilogramme paid to the growers for grapes sold on the vine varied between the following limits in the years 1935, 1936 and 1937.

	1935 (Drhs.)	1936 (Drhs.)	1937 (Drhs.)
Sultanas	4-4.5	4.5-5	4.5-5
Takhtas (Rozakis)	2-3	4-5	3.5-4
Rozakis	3.5-6	4.5-6.5	4.5-6.5
Sideritis	3-3.5	5-5.5	5.5-6

IV. — Vines for grapes for drying.

The dried grapes produced in Greece are of three kinds:

- (a) the small pipless kind known as currants
- (b) the light-coloured pipless kind known as sultanas,
- (c) other varieties such as rozakis, takhtas etc.

The production of currants is by far the most important.

Over the five-year period 1933-37 Greece produced on an average about 28 per cent. of the world output of dried grapes, whereas before the War this percentage had been about 45. The decrease is to be explained by the considerable increase in the production in other countries, particularly Australia and California.

Of the world output of currants alone Greece produced 87.6 per cent.; of other varieties, 7.42 per cent.

(¹) Other varieties of table grapes domestically consumed are: Corinthian grapes, Fraoula, which are too fragile to be transported, and many others of minor importance such as *Heptakylon*, *Aitonychi*, etc. as well as others of double purpose or must grapes such as *Batiki*, *Roditis*, *Phileri* and *Sabbatiano*.

Distribution of World Production of Dried Grapes.

Years	Average 1909-1913			Average 1926-1930			Average 1933-1937		
	% of total world production of currants	% of total world production of sultanias etc.	% of general total of world production of dried grapes	% of total world production of currants	% of total world production of sultanias etc.	% of general total of world production of dried grapes	% of total world production of currants	% of total world production of sultanias etc.	% of general total of world production of dried grapes
Greece . . .	97.73	7.13	44.66	90.32	4.85	27.76	87.62	7.42	28.21
Australia . .	2.26	2.67	2.50	9.58	10.06	9.93	11.83	12.66	12.44
California . .	0.01	28.38	16.64	0.10	54.86	40.17	0.55	43.16	32.08
Union of S. Africa . .		0.50	0.29		1.10	0.81		1.33	1.02
Turkey . .		20.81	12.19		10.74	7.86		14.58	10.79
Iran . . .	—	13.05	7.64	—	4.38	3.21	—	7.72	5.71
Spain . . .	—	10.36	6.07	—	4.78	3.50	—	4.58	3.39
Russia . . .	—	11.88	6.95	—	5.60	4.10	—	5.91	3.93
Italy . . .	—	3.17	1.83	—	1.34	0.98	—	1.33	0.98
Other countries . . .	—	2.03	1.23	—	2.29	1.68	—	1.31	1.45
Total . . .	100 —	100 —	100 —	100 —	100 —	100 —	100 —	100 —	100 —

Currants.

Production regions, quality, trademarks. — The production of currants is limited to the Peloponnesus and the Ionian islands, where the vine is most carefully tended by very experienced growers with a long tradition behind them.

In general Greek currants are of excellent quality and much sought after on the world market.

In order to maintain the reputation of Greek currants the law provides for a supervision of production and for the use of protected trade marks ⁽¹⁾.

Domestic Consumption of Currants.

(Kilogrammes).

	1932-33	1933-34	1934-35	1935-36	1936-37
Direct consumption	355,275	352,800	1,100,700	1,842,975	3,220,380
Compulsory use in bread-making	1,597,275	2,179,350	1,637,100	1,449,630	—
Consumed in the army	398,700	—	317,655	350,235	337,860
Industrial uses (production of alcohol, vinegar, etc.)	47,510,325	38,638,080	59,301,495	49,468,500	72,143,550
Total . . .	49,861,575	41,170,230	62,356,950	53,111,300	75,701,790

⁽¹⁾ Recent laws: 892 and 897 of 1937 (concerning trademarks, etc.) and Decrees of August 1, 1937 and August 25, 1938 (concerning the supervision of gathering and drying, the protection of quality, packing and marketing of currants).

Currants: Area, Output and Exports.

Years	Area cultivated (Hectares)	Output		Exports	
		Quantity: (Metric tons)	Value (Thousand drachmal)	Quantity: (Metric tons)	Value (Thousand drachmal)
Averages:					
1830-52.	10,314	23,515	—	—	—
1853-57.	22,044 (1860)	13,572	—	—	—
1858-62.	—	41,256	—	39,060	—
1863-67.	28,030 (1867)	51,312	—	51,390	—
1868-72.	34,632 (1871)	60,192	—	60,929	—
1873-77.	43,500 (1878)	74,673	—	73,773	—
1878-82.	50,000 (1881)	102,409	—	94,770	—
1883-87.	—	118,296	—	121,612	—
1888-92.	67,000 (1891)	139,167	—	134,426	—
1893-97.	—	157,410	—	129,690	—
1898-1902.	—	125,730	—	107,010	—
1903-07.	—	150,570	—	111,600	—
1908-12.	—	155,070	—	110,034	—
1913-17.	—	117,450	—	77,762	—
1918-22.	—	113,490	—	86,967	—
1923-27.	—	127,449	—	81,459	—
1928-32.	50,042 (1929)	113,508	915.0	66,218	885.7
1933-37.	64,514 (1937)	130,601	1,186.9	70,289	995.6

It can be seen from the table above that the greater part of the currants domestically consumed are used in industry, the consumption of dried grapes as such being very small.

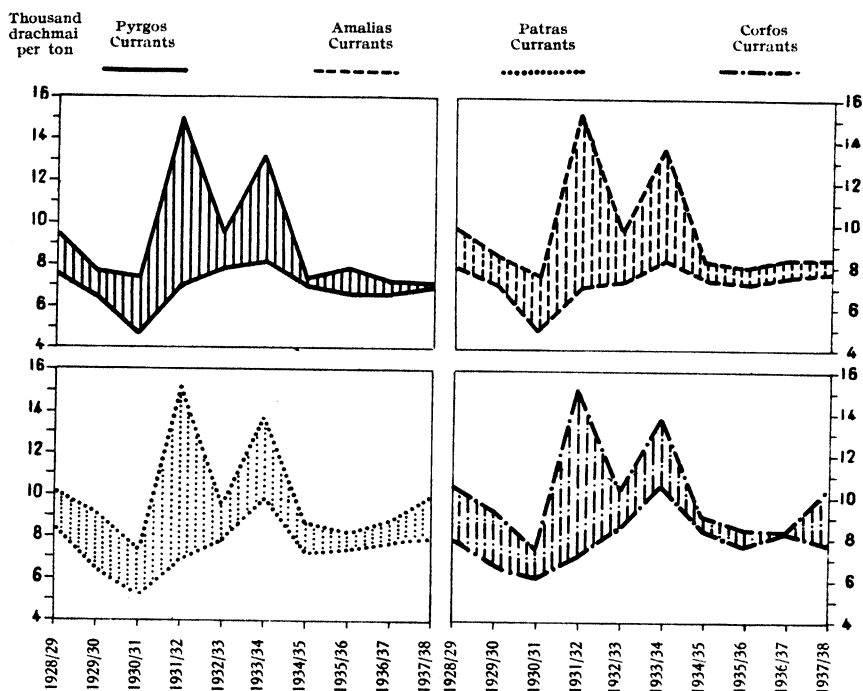
Exports of Currants
(Metric tons).

Destination	1918-23	1923-28	1928-33	1933-37
United Kingdom	57,714	52,870	43,158	43,424
Netherlands	7,976	11,046	9,083	8,905
Germany	1,433	7,236	6,379	7,133
United States.	13,535	5,932	3,432	2,672
Italy	323	2,041	2,337	1,510
U. S. S. R.	—	—	831	5
France	4,202	743	424	502
Canada	688	651	109	11
New Zealand	—	43	56	40
Other countries	1,097	739	409	1,218
Total	86,968	81,301	66,218	65,420

It can be seen from the table that about two-thirds of the total exports go to the United Kingdom, which country receives the best quality currants. Of the average yearly exports during the ten year period 1928-1937, 66.14 per cent. went to the United Kingdom, 13.34 per cent. to Netherlands, 10.15 per cent. to Germany, 4.79 per cent. to the United States and 3.01 per cent. to Italy; these five countries take 97.43 per cent. of the exports of currants from Greece.

GRAPH 5. — *Prices of Currants.*

ON THE PATRAS MARKET.



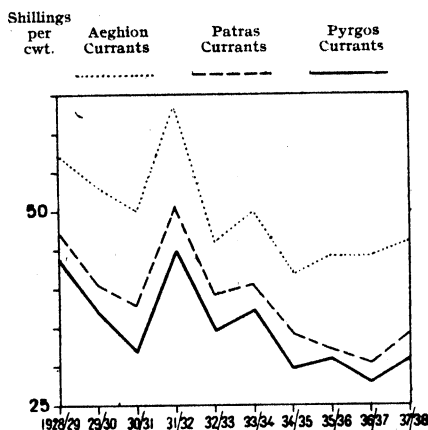
The main competition which Greek currants have to meet on world markets, is that of Australian currants, which are offered at lower prices and accorded preference for example in the United Kingdom, and which are well advertised.

Position of the currants market and measures taken by public authorities. — Large quantities of currants were produced in Greece, and particularly in the Peloponnesus as early as the time of the Turkish domination; they were exported mainly to Great Britain and secondly to the Netherlands and other countries.

During the seven years of the War of Independence the production of currants greatly diminished as a result of the devastation and abandonment of the vineyards.

With the setting up of the new State and the establishment of peace and order, output increased again and continued to grow from year to year. The area under vines for currants increased from 3,800 hectares in 1830 to 17,258 hectares in 1851 and to 34,632 in 1871; the output increased from 8,550 tons in 1830 to 38,835 tons in 1851 and to 51,615 in 1870.

GRAPH 6. — *Prices of Currants.*
ON THE LONDON MARKET.



In the years immediately following 1870 there was a great increase in the demand for dried grapes to be exported to France for the production of wine, this increase arising from the destruction of French vineyards by phylloxera ⁽¹⁾. The marketing of the output of dried grapes at high prices led the Greek vine-growers to increase the area of their vineyards and consequently the output of dried grapes, at the expense of other less profitable branches of agriculture. Thus the area under vines for currants rose from 34,632 hectares in 1871 to 67,000 hectares in 1891 and the output from 51,615 tons in 1870 to 154,800 tons in 1891.

The French vineyards having been re-established in the years following 1893 with American stock, the French imports of dried grapes decreased so that there remained in Greece a surplus production which could not be marketed. There was a heavy fall in prices, from 23 gold francs per hectolitre in 1876 ⁽²⁾ to 18.50 in 1878, to 4.46 francs in 1893 and 4.21 francs in 1894. This fall put the producers of dried grapes into an exceedingly difficult position.

To meet the crisis the State reduced the tax on exports by 0.4 drachmai per hectolitre and imposed a quantitative levy of fifteen per cent. on exports, the stocks of dried grapes resulting from this levy being sold to be manufactured

⁽¹⁾ The exports to France increased from 17,000 tons in 1879-80 to 70,000 tons in 1889-90.

⁽²⁾ Average price.

into alcohol (Law of 1895). This measure proved to be ineffective and in 1899 a bank for the producers of dried grapes was founded, but this institution made serious losses.

In 1905, in accordance with the law of that year which aimed at putting the dried grapes industry on a sound basis, the Privileged Company for the Protection of the Currant Trade was founded. This was a private company which undertook to buy at the end of each year any quantity of dried grapes which it had been impossible to sell, paying a price of 11.5 – 15.5 drachmai per hectolitre; it further undertook a publicity campaign for currants in foreign markets; it granted loans to vine-growers and paid the State tax of 0.4 drachmai per hectolitre. The State passed to this Company the products of the quantitative levy fixed at 20 per cent., the export tax, fixed at 15 per cent. paid in kind, and allowed it to collect an insurance levy of 0.7 drachmai per hectolitre.

This company failed and was dissolved in 1924, so that the problem of adjusting demand and supply in the dried grapes market remained unsolved.

In 1925 ⁽¹⁾ the Central Currants Office was founded. This Office has legal personality; it operates through a cooperative organisation, controlled by a body of growers of grapes for currants and membership is compulsory for all producers. The Office is a public utility body with certain of the features of a public service, e. g. the receipt of taxes, etc. Its objects are:

(1) to balance supply and demand by imposing a quantitative levy on exports and by the purchase of unsold supplies, and to manage and market the stocks so formed.

(2) to insure the crops and to study and make known methods of cultivation and handling of products that would improve quality and decrease costs of production, and to suggest to the Government legislative measures for the safeguarding of the quality of the products.

(3) to manage the stocking of dried grapes and to carry out purchases and sales for third parties, such as cooperative societies, etc.

(4) to supervise and organise trade supplies.

(5) to carry out publicity for dried grapes both at home and abroad.

(6) to provide credits and other facilities for producers etc..

To the Currants Office were granted all the rights possessed by the earlier Privileged Company and certain others including that of contracting loans.

In order to provide for the study of technical questions relating to the improvement of quality and the reduction of the costs of production, the Currants Office set up the Dried Grape Institute at Pyrgos in the Western Peloponnesus.

During the years immediately following its foundation the Currants Office was able satisfactorily to balance supply and demand, but in 1929-30 began a period when a large output in Greece coincided with a fall in the prices of Californian dried grapes and with the general economic crisis. The Office was then obliged to buy large quantities at high prices. This reduced the capital of the

⁽¹⁾ Decree of August 10, 1925, later modified in respect of details of organisation and operation (Law 379, of 1936 etc.).

Office and undermined the whole organization, with the result that since 1929-30 the Office, in order to be able to continue its operations and meet its engagements, has had to receive financial aid from the National Bank of Greece under a State guarantee.

In 1936-37 the Office was exempt from the land tax of 40 million drachmai and received a subsidy of 100 million drachmai⁽¹⁾. At the same time measures were taken to increase the quantity of dried grapes delivered by the Office to the alcohol industry.

Thus the financial situation of the Office was stabilized and it also became possible to decrease the levies on the export of dried grapes.

At the same time the quantitative levy was abolished and replaced by a subsidy for the purpose of improving quality. Since then the market has been supported by the purchase of supplies coming on to the market. The producers are obliged to gather and dry separately poor quality grapes and to deliver them to the Office. An improvement in quality has thus been brought about which is a great advantage for the export trade.

To protect the superior quality product special trade marks have been established for the various categories of dried grapes.

In addition, the making of new vineyards for the production of currants has been prohibited, and, in view of an annual excess of output over exports which amounted on an average to 40-60 thousand tons, which is more than can be absorbed on the domestic market, the present Government has had to provide for the partial ploughing up of vineyards producing dried grapes and especially those of which the products were of inferior quality⁽²⁾. It is hoped thus to put the dried grape industry on a permanently sound basis.

Sultanas and rozakis.

Output and value. — The area of vineyards for the production of sultanas and rozakis has grown steadily in recent years, as these vines have proved profitable and their products are easily marketed.

Exports. — The output of sultanas and rozakis, unlike that of currants, is almost entirely exported. The small amounts sold on the domestic market fetch a price varying between 19 and 24 drachmai per kilogramme according to quality.

⁽¹⁾ Laws August 1936.

⁽²⁾ The Laws 753 of 1937 and 1361 of 1938 provide that ploughing-up is to be conditional on the obtaining of the consent of at least 51 per cent. of the vine-growers of the region concerned or of a number of growers whose vineyards cover at least 55 per cent. of the area to be ploughed. The growers whose vineyards are ploughed up will receive over a long period of years an indemnity equal to the net return yielded by their vines. At the same time they will receive from the State technical and financial aid in the replacement of the destroyed vineyard by other crops suited to the particular economic conditions of their district. The districts producing the worst quality dried grapes and where ploughing-up is most to be advised are the plain of Gastouni, the district of Elis and Messenia which produces the worst quality.

Area of Vineyards for Sultanas and Rozakis and Quantity and Value of Output.

Countries	Sultanas			Rozakis		
	Area (Hectares)	Output (Quintals)	Value (Drachmai)	Area (Hectares)	Output (Quintals)	Value (Drachmai)
1928	3,867	112,394	103,901,280	—	—	—
1929	6,328	127,963	101,745,194	2,635	43,059	12,137,283
1930	6,241	157,187	139,118,271	—	—	—
1931	7,286	158,959	176,450,525	2,115	30,350	23,251,800
1932	7,430	191,944	232,475,345	2,526	62,640	18,122,450
1933	8,298	264,887	261,015,580	2,760	58,966	21,353,930
1934	8,281	253,613	302,497,345	2,160	62,109	21,163,770
1935	8,809	298,330	251,346,628	2,611	69,076	26,141,575
1936	10,853	244,513	308,480,515	2,859	33,892	20,152,260
1937	11,167	280,774	435,362,800	2,141	37,469	26,636,990

Export of Sultanas and Rozakis.

Years	Quantity (Metric tons)	Value (Thousand drachmai)	Years	Quantity (Metric tons)	Value (Thousand drachmai)
1928	15,304	161,986	1933	23,326	257,335
1929	15,085	178,347	1934	23,224	315,767
1930	13,736	188,284	1935	31,408	358,098
1931	13,386	184,059	1936	26,156	368,951
1932	16,996	266,521	1937	23,607	445,365

Destination of Exports of Sultanas and Rozakis.

	1933	1934	1935	1936	1937	Average 1933-37	Percentage of average total export
	Metric tons						
Egypt	520	296	265	168	130	187.7	0.69
Austria	—	—	625	995	1,222	947.3	3.50
Belgo-Luxembourg Union .	90	76	102	21	23	48.7	0.18
France	391	224	299	216	431	315.3	1.17
Germany	3,093	5,304	9,301	11,018	7,993	9,437.3	34.88
Yugoslavia	456	1,486	3,344	1,631	2,566	2,513.7	9.29
Denmark	—	—	567	686	1,091	781.3	2.89
United Kingdom	5,828	5,768	9,553	6,081	5,005	6,879.7	25.43
Italy	7,447	5,742	3,587	676	177	1,480.0	5.47
Netherlands	4,435	2,555	1,137	1,053	560	916.7	3.39
Poland	—	230	254	484	484	407.3	1.50
Romania	—	219	419	240	412	357.0	1.32
Czechoslovakia	442	646	1,002	1,965	2,212	1,726.3	6.38
Other countries	624	678	953	922	1,301	1,058.7	3.91
Total	23,326	23,224	31,408	26,156	23,607	27,057.0	100 —

Germany whose imports are increasing and the United Kingdom whose imports remain steady together take more than 60 per cent. of the total Greek exports of sultanas and rozakis.

Prices of Greek and other Sultanas on the London Market.

(Shillings per hundredweight).

Country of origin	1932-1933		1933-1934		1934-1935		1935-1936		1936-1937	
	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
Greece:										
Old Greece . . .	28/-	80/-	30/-	68/6	45/-	80/-	38/-	75/-	50/-	80/-
Crete	30/-	72/-	30/-	65/-	28/-	70/-	36/-	62/-	48/-	70/-
Australia	34/-	78/-	28/-	67/-	33/-	70/-	35/-	76/-	40/-	70/-
California	32/-	40/-	30/6	35/9	32/3	40/6	34/-	36/6	34/-	41/-
Turkey	35/-	60/-	30/-	53/-	38/-	56/-	34/-	48/-	38/-	58/-
Iran	19/-	46/-	21/-	30/-	28/-	50/-	27/-	38/-	30/-	48/-

Greek sultanas realised the best prices by reason of their excellent quality, which gives them a privileged place on the world market and makes them easily marketable.

It is thus clear that it would be well to encourage the production of sultanas, particularly at the expense of other less valuable varieties. For raisins, other than rozakis, it would be well to grow muscatel for drying.

V. — Conclusions.

As we have said the growing of the vine is most suitable to the natural, demographical, social and economic conditions of Greece. We have shown the importance for Greece of vine-growing and have outlined the advantages of this branch of agriculture both for the growers and for the whole economic life of the country. It does, however, present a very difficult problem, namely that of the marketing of the output. Marketing difficulties have been the main cause of the crisis which has severely disturbed regional economic life, in the Peloponnesus, for example, and the whole economic activity of the country.

This problem is all the more difficult as the products of the vine do not constitute a primary foodstuff, and as it is necessary to rely on the export market for the disposal of the greater part of the output.

A limitation of production, at least a general limitation is out of the question, and a reduction of the area of vineyards can be considered only on a very small scale. The one remaining solution is, then, the finding of new markets at home and abroad, to which end efforts can be directed along three lines.

(1) Agricultural policy should aim at avoiding any increase in vineyards in parts of the country where the cultivation of the vine is not rendered absolutely necessary by social, economic, ecological and soil factors; at the prohibi-

tion of new plantations and replantation except in special cases; at achieving the ploughing up of vineyards of which the products are of inferior quality and cannot be easily improved; and at ensuring a better distribution of the kinds and varieties of vine cultivated, *e. g.* there should be wise choice of varieties preference being given, where possible, to vines for table grapes. Also efforts should be directed to securing the greatest possible improvement of all vine products, the standardisation of products, the encouragement of steady, persistent efforts with the object of rationalising production and so reducing costs; the organisation and steadying of supply, and the profitable utilization of the by-products of vine-growing.

The means to these ends are well known—the encouragement of research into vine-growing and wine-making, the propagation of technical knowledge and the making known of suitable methods by education and propaganda, better cooperative and professional organisation of the growers, proper use of agricultural credit, etc.

(2) Continuous and systematic efforts should be made to increase the domestic consumption of all vine products, which might be very much greater than it is at present. It is necessary not only to organise marketing and to achieve a reduction of prices by lowering the costs of production and transport etc. but also to organise better local marketing and to use every means of propaganda in order to increase the consumption of the products of the vine.

(3) The measures already mentioned combined with improved and cheaper transport facilities and better organisation of marketing abroad and propaganda in foreign markets would increase the outlets for Greek vine products in those markets where they are already sold and where there is fair competition. But apart from this it is absolutely necessary in many cases to introduce special clauses into trade agreements with importing countries; and agreements with other producing countries with common or reconcilable interests, such as Australia for currents and Turkey for sultanas, would be of very great value.

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CHANGES IN THE PROFITABLENESS OF AGRICULTURE IN CERTAIN COUNTRIES OF EUROPE

SUMMARY: I. Introduction. — Changes in the gross return, the cost of production and the social income in the following countries: Switzerland, Norway, Finland, Sweden, Denmark and Würtemberg (Germany). II. Introduction. — Changes in the gross return, the cost of production and the social income in the following countries: Germany, France (Soissons and Etrépagne), the Netherlands (Overijssel), Scotland, Hungary, Czecho-Slovakia, Poland, Lithuania, Latvia, Estonia.

II.

In the first part of this article we studied changes in the profitability of agriculture in Switzerland, Norway, Finland, Sweden, Denmark and Würtemberg. We shall now investigate the profitability of agriculture in Germany, France (Soissons and Etrépagne), the Netherlands (Overijssel), Scotland, Hungary, Czecho-Slovakia, Poland, Lithuania, Latvia and Estonia. The countries in the first group were dealt with separately, because the material which they supplied was fuller and enabled us to go back to the War years.

Although the data for the whole of Germany, like those for Würtemberg, go back to 1924, we have given them here because they are less full and do not allow of the profit or loss on total assets being calculated. For we do not know what the interest payments on farm assets are for the whole of Germany. The

gross return and farm expenses in Germany rose from 1924-25 to 1927-28, fell until 1931-32, and rose again from 1932-33. The social income increased in a smaller ratio than the gross return from 1924-25 to 1927-28. This was due to the fact that, of the components of farm expenses, working expenses rose most.

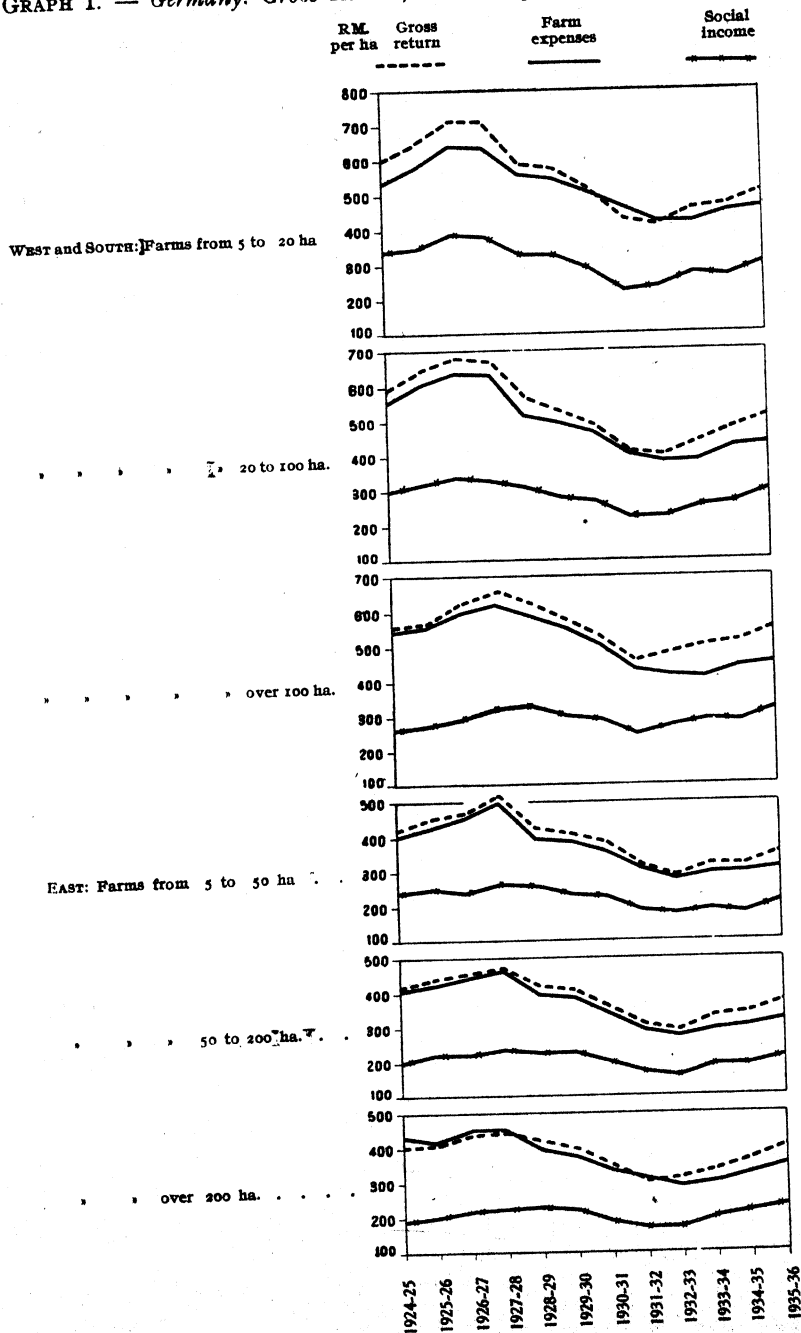
In Scotland the gross return fell below the cost of production from 1930-31, exceeding it again from 1933-35. In Latvia it just exceeded the cost of production in 1933-34 but failed to maintain this position. Only in 1936-37 did it rise high enough to enable the farmers to make an appreciable profit. In Estonia, Latvia and Poland the gross return, after falling much more steeply than the cost of production, rose again from 1934-35, but only just succeeded in equalling the cost of production. In the Netherlands, the trend in the profitability of agriculture was different in the marshy districts, where cereals are the main crop, and in the other areas, in which stockraising is of more importance. The good years in the marshy districts were 1933-34, 1934-35 and 1935-36. In the other areas the best years were 1929-30 and 1936-37; in 1931-32 the difference between the gross return and the cost of production was very considerable. The accountancy figures for Hungary only cover a period of five years. They show, however, that the situation has been gradually improving since 1933-35. The farms in Soissonais and Étrépagny were affected by special circumstances, of which more will be said below.

Germany.

The net return fell heavily during the crisis years, 1931-32 and 1932-33, following the fall in the gross return, and on farms of from 5 to 20 hectares in the west and south and farms of over 200 hectares in the east it even fell below zero. From 1931-32 on large farms in the west, south and east, and from 1932-33 on all farms the gross return began to rise again, the difference between it and farm expenses, which did not increase at the same rate, becoming increasingly more marked. This movement was particularly noticeable on farms in the west and south of 20 to 100 hectares and over 100 hectares. The recovery was largely due to the rise in the prices of farm products, which moved towards the 1929-30 levels.

Parallel with the increase in the prices of farm products, however, there was an increase in farm expenses in 1934-35. Except for farms of 20 to 100 hectares in the west and south and farms in the east of more than 200 hectares, the gross return fell slightly in 1934-35 and the net return also decreased. The largest fall occurred on farms of 5 to 20 hectares in the west and south.

The year 1935-36 was the best since 1928-29. Prices of farm products rose and especially those of slaughter animals. The general index rose from 100 in 1934-35 to 104.6 in 1935-36. This increase in prices offset the unfavourable influence which poor crops had had on the gross return. The surplus value thus realised gave farmers the means to pay back part of their debts and to increase purchases of goods they required.

GRAPH I. — *Germany: Gross Return, Farm Expenses, Social Income.*

Index Number of Wholesale Prices in Germany.

(1913 = 100)

	Yearly average (July to June)					
	1929-30	1931-32	1932-33	1933-34	1934-35	1935-36
Vegetable foodstuffs	119.9	117.6	101.3	101.4	113.8	113.9
Slaughter animals	124.0	71.8	62.9	67.6	76.9	89.6
Animal produce	132.2	99.2	92.1	104.7	105.8	108.7
Feedstuffs	104.3	96.8	85.5	93.3	105.7	106.8
<i>General index for agricultural products</i>	<i>122.0</i>	<i>97.1</i>	<i>85.8</i>	<i>91.3</i>	<i>100.0</i>	<i>104.6</i>
General index for all products	132.2	103.3	93.0	95.7	100.6	103.2

The increase in the net return was greater in the west than in the east:

Net Return per Hectare.

(Reichsmarks)

Year	West and south			East		
	5 to 20 ha.	20 to 100 ha.	over 100 ha.	5 to 50 ha.	50 to 200 ha.	over 200 ha.
1934-35	17	62	76	16	36	42
1935-36	50	87	99	39	47	54

Farm expenses (the difference between the gross return and the social income) fell from 1928-29 to 1931-32. Notwithstanding, the social income also fell about 30 per cent. (see the figures below), the gross return having fallen more steeply than farm expenses. From 1932 the social income showed a more or less regular upward tendency according to the area and the size group.

Index Numbers of Social Income.

(1928-29 = 100)

	1931-32	1932-33	1933-34	1934-35	1935-36
West and south:					
farms of 5 to 20 ha.	69	71	81	78	89
farms of 20 to 100 ha.	71	72	81	85	96
farms of over 100 ha.	76	81	87	86	97
East:					
farms of 5 to 50 ha.	74	70	75	70	81
farms of 50 to 200 ha.	77	71	83	82	92
farms of over 100 ha.	73	74	86	91	101

On the farms of 5 to 20 hectares in the west and south, and on farms of 5 to 50 and of 50 to 200 hectares in the east, this movement did not continue. On large farms and average-sized farms in the west and south and in large farms in the east, on the other hand, the movement was continuous, and the social revenue they yielded in 1935-36 even exceeded the 1928-29 figure by 1 per cent.

France.

a. *Soissons*. — The general fall in prices and the policy of deflation led to a fall in the cost of production from 1931-32 to 1935-36. In 1936-37 it began to rise, owing to the devaluation, the expenditure involved in the application of the new social legislation and the increase in wages. The gross return fell in 1930-31, in which year the output of wheat was poor, only 19.8 quintals of wheat per hectare being harvested in Soissonais, compared with the average yield of from 30 to 32 quintals. The gross return fell again in 1934-35 and 1935-36. The unsold stocks from the exceptional 1933 crop depressed the market; prices fell from 114 francs in 1933-34 to 81.80 in 1934-35. In 1935-36 wheat received the slightly higher price of 91.60 francs per quintal, but on a metric ton of beet the farmer earned only 118 francs against 122 the year before. In 1936-37 prices were raised by the devaluation, the price of wheat moving from 91.60 francs in 1935-36 to 136.45 in 1936-37 and that of sugarbeet from 118 to 166. The gross return rose rapidly and, as in 1929-30, 1932-33 and 1933-34, passed the cost of production.

Profit or Loss on Total Farm Assets per 100 francs Gross Return, in Soissonais.

1929-30	1.01
1930-31	— 29
1931-32	— 12.17
1932-33	2.99
1933-34	8.55
1934-35	— 5.67
1935-36	— 3.86
1936-37	2.45

The worst years were 1931-32 and, particularly, 1930-31; the best 1933-34, in which year the farmer ⁽¹⁾ made a profit of 8.55 francs per 100 francs gross return, or 268 francs per hectare. The social income, which was about 1,700 francs per hectare in 1929-30, fell to 1,000 francs in 1930-31. Following the movement in the gross return, it reached in 1936-37 the figure at which it stood in 1929-30.

(1) By profit or loss is meant, of course, the excess of the gross return over the cost of production, or of the cost of production over the gross return.

b. *Etrépagny*. — In contrast to the farms in the Soissons district, which are mainly employed in growing wheat and sugarbeet, the farms of Etrépagny maintain a more even balance between livestock and vegetable crops. This explains why the gross return on these farms did not fall in 1935-36. The increase in gross profits on livestock, which rose from 46,034 francs in 1934-35 to 66,964 in 1935-36, made up for the fall in the returns from arable, which was considerable. The beet crop fell from 34.90 metric tons in 1934-35 to 24.19 metric tons in 1935-36; that of wheat from 30 to 25 quintals. The 1936-37 crop was also unsatisfactory, but the devaluation raised prices; the gross return rose to 250 francs per hectare, though this was still insufficient to cover the cost of production.

Loss on Total Farm Assets per 100 francs Gross Return in Etrépagny.

1934-35	— 13.89
1935-36	— 4.64
1936-37	— 0.40

The social income reached about 200 francs per hectare in 1935-36 and over 250 francs in 1936-37.

Netherlands (Overijssel).

Apart from farms in the marshy districts where cereal growing is the main activity, we find that in the four districts where the farm population is preponderantly employed in stockraising economic conditions have developed in the same way throughout the ten-year period under consideration. The cost of production fell regularly from 1929-30. Only in 1936-37 did it rise a little. The gross return, after rising rapidly in 1929-30 to a point just below the cost of production, fell so sharply that in 1931-32 it was less than the 1929-30 figure by 50 to 60 per cent. It rose in 1933-34 to fall again in 1934-35; it then continued to move upwards, nearly reaching the cost of production in 1936-37. The gains and losses of farmers during the best and worst years are shown below:—

Loss on Total Farm Assets per 100 florins Gross Return in Overijssel.

	1929-30	1931-32	1933-34	1934-35	1935-36	1936-37
Grazing districts	— 0.76	— 87.68	— 27.37	— 54.11	— 32.19	— 5.63
Ysselstreek	— 4.34	— 85.84	— 11.76	— 31.28	— 20.48	— 1.35
Sandy districts	— 0.14	— 60.22	— 25.08	— 45	— 33.45	— 14.86
Sandy and peat districts.	— 3.16	— 103.37	— 24.54	— 48.92	— 32.52	— 6.95

These figures enable the loss suffered by the farmers in 1931-32 to be measured:— 60 to 87 per cent. of the gross return on farms in the first three groups. In the sandy and peaty districts farmers suffered a total loss of 103 florins per 100 florins gross return! The position improved a little in 1933-34 despite the fall in the prices of animal products, the index of which moved from 57 in 1931-32 to 53 in 1933-34 (1924-25 to 1928-29 = 100). The peasants carried on stockraising more intensively.

Gross Return on Cattle in Overijssel.

(Florins per hectare)

	1932-33	1933-34	1934-35
Grazing districts	1.02	54.17	20.68
Ysselstreek	19.46	58.64	31.03
Sandy districts	10.61	45.22	20.62
Sandy and peat districts	8.95	49.20	21.49

In 1934-35 the gross profit on cattle was not more than half that of the preceding year; the price index for animal products fell from 53 to 49 and the total gross return decreased again. Though not as great as in 1931-32 the losses of the peasants were very considerable, amounting to nearly 50 per cent. of the gross return. Fortunately the price index for animal products continued to move upwards in 1935-36 and 1936-37, rising from 49 in 1934-35 to 51 in 1935-36 and to 57 in 1936-37. The gross return started to rise again, and the losses of the peasants fell to between 10 and 20 per cent. in 1935-36 and between 20 and 30 per cent. in 1936-37.

The social income followed a course parallel with that of the gross return, with which it is closely connected. From 1929-30 to 1931-32 it fell by about 60 per cent. in the grazing districts, Ysselstreek and the sandy districts, and by 82 per cent. in the sandy and peat districts. In 1936-37 the social income was 0.79 per cent. higher in the grazing districts and 15.11 per cent higher in Ysselstreek than in 1929-30, whilst in the sandy and peat districts it still remained at its 1929-30 level.

The position of agriculture in the marshy districts was quite different. The gross return and the cost of production fell from 1929-30 to 1932-33, the cost of production more rapidly than the gross return, so that the peasant, who was losing 20 florins per 100 florins gross return in 1929-30, gained nearly 13 florins in 1932-33. The gross return remained above the cost of production from this year until 1936-37, when the farmer's loss amounted to 0.66 per cent. of the gross return. The greatly improved position in 1933-34 was due to the Government's raising wheat prices, these moving, in fact, from 10.17 florins per quintal in 1927-30 to 12.50 florins; for cereals are the main crop in these di-

stricts. Later, however, the price of wheat began to fall again and was only 10.19 florins per quintal in 1935-36 and 9.84 in 1936-37.

Owing to the very large reduction in farm expenses from 1929-30 to 1932-33 the social income in 1936-37 still exceeded the 1929-30 figure by 15 florins.

Scotland.

The gross return did not fall much below the cost of production except in the eastern farms engaged in tillage and the feeding of cattle and sheep, and the Border farms raising and feeding sheep, where the difference was considerable. In the eastern farms the loss was £ 10.58 per hectare in 1928-29, or £ 42.46, per £ 100 gross return, decreasing to £ 1.94 per hectare in 1929-30 and £ 0.03 in 1930-31. In 1931-32 the farmer gained £ 0.18 per hectare. But in the following year he again made a loss, amounting to £ 21.21 per £ 100 gross return. From 1932-33 the position began to improve, so much so that by 1936-37 the profit earned was about £ 19.36 per £ 100 gross return. The fall in the gross return in 1932-33 was largely due to the drop in the prices of cattle. The price index for milch cows (1911-13 = 100) fell from 118 in 1931-32 to 103 in 1932-1933, and the price index for meat cattle from 117 to 100. The price index for milch cows began to rise again from 1934-35, reaching 110 in 1936-37, as a result of Government intervention. The price index of wheat, which had fallen to 79 in 1931-32, rose to 120 in 1936-37, owing partly to the upward movement in wheat prices on the world market, and partly to the imposition of import duties.

The rapid fall in 1931-32 in the gross return on Border farms engaged in raising and feeding sheep is also explained by the fall in prices. The index of prices of sheep and wool moved as follows from 1930-31 to 1932-33:

	1930-31	1931-32	1932-33
Fat sheep	147	110	103
Other sheep	130	78	84
Wool	52	45	66

In 1931-32 these farmers lost £ 46.50 per £ 100 gross return. The prices improved again later, and in 1936-37 the farmer made a profit of £ 12.77 per £ 100 gross return.

In 1930-31, when the crisis was at its worst, a loss of about £ 20 per £ 100 gross return was suffered on farms in the north-east raising and feeding cattle. Since 1934-35 subsidies have been granted by the Government for cattle-raising; in 1936-37 farms in the north-east employed in fattening cattle yielded a net profit of 14 per cent. of the gross return. On farms feeding and raising cattle this profit exceeded 23 per cent. in 1936-37.

Dairy farms in the north-east and south-west were the most fortunate, having benefited from the introduction of the Milk Marketing Scheme. Up to 1932-33 the gross return was between £ 0.73 and £ 2.20 above the cost of production. From 1933-34 conditions improved still further. The milk price index rose from 147 in 1932-33 to 161 in 1933-34, 170 in 1934-35, 177 in 1935-36, falling to 176 in 1936-37. Farmers' net profits, per £ 100 gross return, were £ 15.85 in 1933-34, £ 19.39 in 1934-35, £ 22.44 in 1935-36 and £ 23.47 in 1936-37.

During the crisis years the fall in value of the social income reached 66 per cent. in the north-eastern farms engaged in feeding and rearing cattle. On the farms in the north-west and south-west engaged in dairy farming, however, the fall in the social income did not exceed 25 per cent.:

Index Numbers of Social Income in Scotland.

(1928-29 = 100)

	1930-31	1931-32	1932-33	1936-37
Farms engaged in feeding adult cattle, north-east	37.27	70.38	53.58	105.86
Farms engaged in feeding and rearing cattle, north-east	33.20	53.66	48.12	112.05
Dairy farms, north-east and south-west	77.35	95.56	75.00	138.41
Arable stock-farming, east	95.27	87.63	55.17	80.09
Sheep farms, Border.	78.79	39.40	56.63	82.17

Like the gross return, the social income rose from 1932-33. In 1936-37 the social income of the first three groups exceeded the 1928-29 figure. That of the two last groups has not yet reached the level it attained in 1928-29.

Hungary.

There was some improvement in the position from 1933-34 but not until 1936-37 did it become really good. From 1934 to 1935 the index for the prices of farm products rose more rapidly than that for the prices of industrial products:

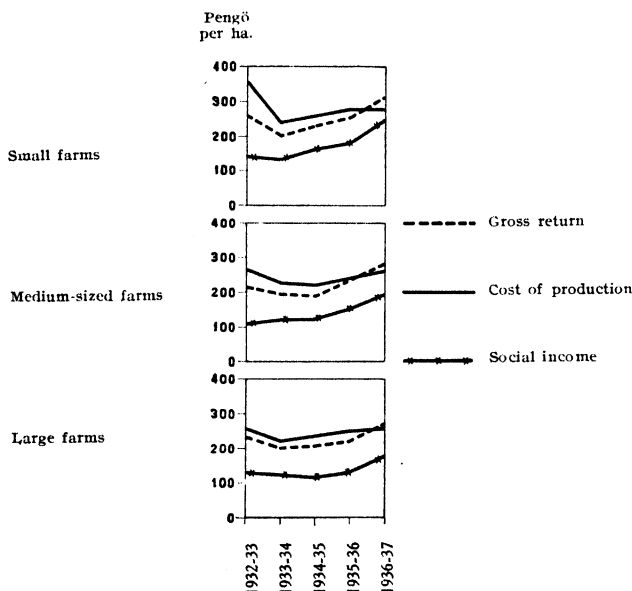
Price Index Numbers

(1913 = 100)

	1934	1935	1936
Farm products	69	79	75
Industrial products	79	89	89

The gross return also rose in 1935-36, but except on average-sized farms it was far from making up the distance which separated it from the cost of production. In 1936-37, however, despite a considerable fall in the prices of agricultural products, it rose above the cost of production. The situation was improved both by good crops, and better export possibilities. According to the figures of the Institute of Economic Studies, agricultural exports rose from 311 million pengös in 1935-36 to 394 in 1936-37 an increase of about 20 per cent.

GRAPH II. — *Hungary: Gross Return, Cost of Production, Social Income.*



The following table shows the gains and losses made by Hungarian farmers from 1932-33 to 1936-37:

Profit or Loss on Total Farm Assets per 100 pengös Gross Return in Hungary.

	1932-33	1933-34	1934-35	1935-36	1936-37
Small farms	— 37.69	— 20.68	— 14.34	— 10.54	10.50
Average sized farms	— 27.30	— 15.82	— 15.73	— 5.41	4.06
Large farms.	— 14.74	— 9.95	— 15.10	— 12.07	0.47

The gain obtained on small farms in 1936-37 was considerable.

In 1932-33 the social income rose on average-sized farms, to 109 pengös per hectare of land cultivated, on large farms to 131 and on small farms to 144.

From 1933-34 on small farms, from 1934-35 on average-sized farms and from 1935-36 on large farms it showed a distinct rise, reaching in 1936-37 246 pengös per hectare on small farms and about 190 pengös on average-sized and large farms.

Romania.

Changes in the social income in Romania between 1933-34 and 1936-37 were discussed in No. 11 of the *Monthly Bulletin of Agricultural Economics and Sociology*, and we shall not discuss them further here. The reader is referred to the above-mentioned issue of the *Bulletin*.

Czecho-Slovakia.

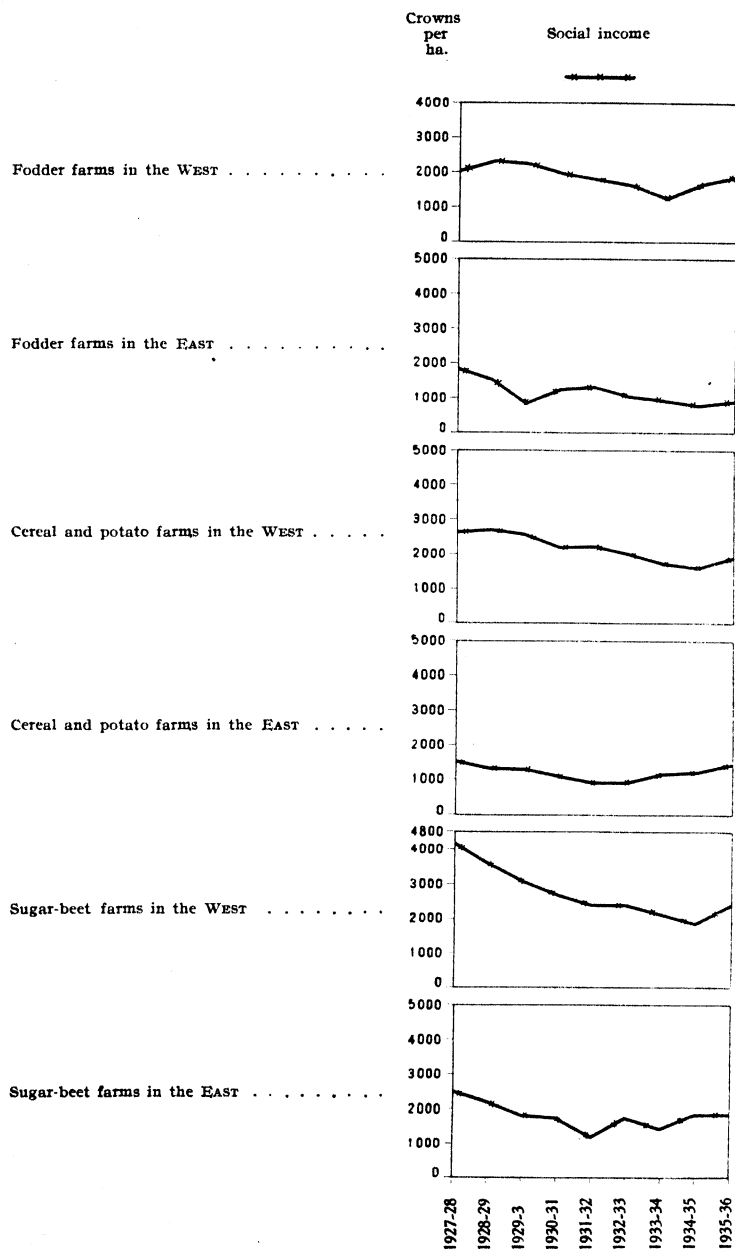
We do not know the values of the gross return and the cost of production on Czecho-Slovak farms. In consequence it is very difficult to investigate changes in the social income from these farms, because, owing to the absence of such data, it is difficult to find the causes of these changes. We cannot in any case attempt to make a comparison between the data for farms in the eastern part of the country, as the tendencies shown by the graph are not clear. This is owing to the number of farms dealt with by the Accountancy Office not being large enough. Fodder farms in the east for which the accountancy figures are known number about 17, those engaged in growing cereals and potatoes 59, while those growing sugarbeet do not exceed 30. The position is quite different in the western part of the country, where the Office deals with more than 300 cereal and sugarbeet farms and about 200 sugarbeet farms.

Price Index Numbers for Agricultural and Industrial Products

(1913-14 = 100)

	Price index of agricultural products	Price index of industrial products
1925-29	820	925
1933-34	495	784
1934-35	511	762
1935-36	579	777

The social income from farms in the west continued to fall more or less regularly according to the method of farming from 1927-28 to 1934-35. This fall was particularly evident on sugarbeet farms, which, owing to their more intensive cultivation, felt the economic crisis more severely. In 1935-36 the rise in

GRAPH III. — *Czechoslovakia: Social Income.*

the social income was considerable; 240 crowns per hectare on fodder farms, 330 crowns for cereals and potato farms and 425 for sugarbeet farms. The social income from fodder farms had begun to recover by 1934-35, the prices of butter in Bohemia and Moravia having risen from 14.73 crowns per kilogramme in 1933 to 15.20 in 1934. In 1935-36 the difference between the prices of agricultural products and prices of goods needed in farming narrowed considerably as is shown by the following figures, taken from the Institute of Accountancy and Rural Economics of Prague.

Thus the position of farmers became less critical.

Profit or Loss on Total Farm Assets.

(Crowns per hectare)

	1934-35		1935-36	
Fodder farms	— 576	— 618	— 176	— 298
Cereal and potato farms	— 722	— 370	— 228	— 28
Sugarbeet farms	— 1,131	— 61	— 295	— 23

For the gross return to cover the cost of production exactly, and the financial year to close without a loss, the prices of agricultural products would have had to have been increased in the west in the following manner: in 1935-36:

Fodder farms	6.51 %
Farms growing cereals and potatoes	7.63 %
Farms growing sugarbeet	8.14 %

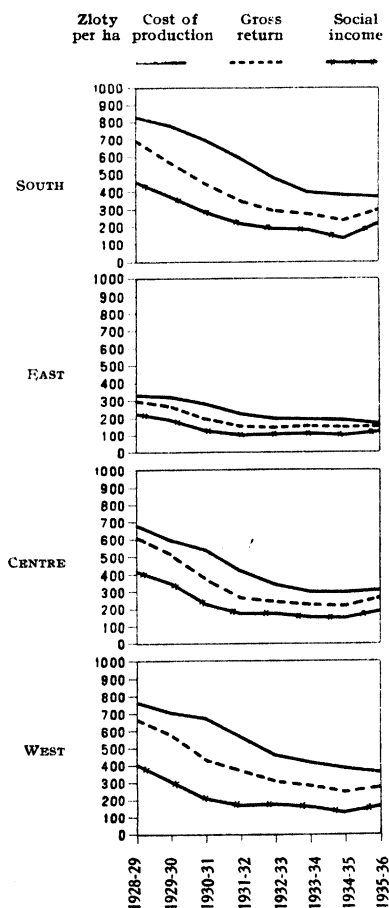
Poland.

The trend of the cost of production, the gross return and the social income did not vary much between one area and another, if the eastern provinces are excluded where exceptional conditions obtain — a hard climate, acid and peaty soil covered with pine and birch forests, dunes covered with oats and rye. In East Poland farming is extensive. In 1928-29 the cost of production rose to about 340 zloty per hectare; at the same time it was about 830 zloty in the south, 680 in Central Poland and 770 in the west. In all cases returns were at a very low level. The fall in the cost of production and gross return ceased in 1931-32, three years earlier than in the other areas, and conditions hardly changed until 1934-35. In 1935-36 the cost of production fell by about 20 zloty per hectare while the gross return rose by about 10 zloty; and the farmer's position was considerably improved.

Profit or Loss on total Farm Assets per 100 zloty Gross Return in East Poland.

1928-29	1931-32	1933-34	1934-35	1935-36
— 10.07	— 50.51	— 29.98	— 34.51	— 13.88

GRAPH IV. — *Poland: Gross Return, Cost of Production, Social Income.*



In South, Central and West Poland the gross return and the cost of production fell heavily from 1927-28 to 1934-35; from 1930-31 to 1931-32 the fall in the gross return was more marked than that of the cost of production. From

1933-34 to 1935-36 the cost of production continued to fall in the west and south; in Central Poland it tended rather to increase. The gross return showed a distinct rise in 1935-36 in each of these three areas. Farm output reached a level in this year higher than that for the average output of the five preceding years:

Farm Output

(Million quintals)

	Wheat	Rye	Barley	Oats	Potatoes	Sugarbeet
1931-35	19.8	63.9	14.5	25.1	310.5	24.1
1935	20.1	66.2	14.7	26.0	325.0	25.0

The following table shows the losses suffered by farmers per 100 zloty gross return.

Profit or Loss on Total Farm Assets per 100 zloty Gross Return in Poland.

	1928-29	1931-32	1934-35	1935-36
South	— 20.20	— 66.13	— 61.92	— 25.70
Centre	— 10.32	— 53.87	— 37.84	— 18.70
West	— 13.97	— 50.55	— 60.53	— 35.95

In South and Central Poland the gross return rose by more than 20 per cent. from 1934-35 to 1935-36; in the west, on the other hand, it increased by only 9 per cent.

The fall in the social income from 1928-29 to 1931-32 was less than that of the gross return owing to the considerable fall in working expenses. After falling again sharply in 1934-35, like the gross return, rising in 1935-36 to less than 52 per cent of the 1928-29 figure in the south, 47 per cent. in the east, 54 per cent. in Central Poland and 58 per cent. in the west.

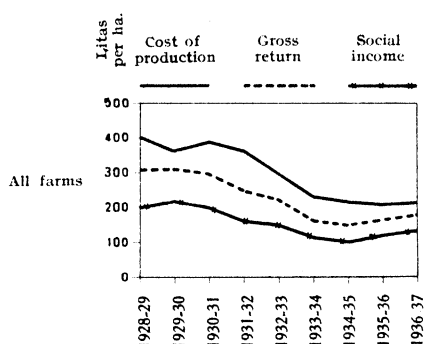
Lithuania.

There were two periods of bad depression in Lithuania, in 1931-32 and in 1933-35. The gross return, as can be seen from Graph V, fell then more rapidly than the cost of production. The loss suffered by farmers per 100 litas gross return increased from 10 litas in 1929-30 to 46 in 1931-32; then, after falling to 39 in 1932-33 it rose to 43 in 1933-34. From 1934-35 the situation defini-

tely improved, farmers losing only 10 litas per 100 litas gross return in 1936-37. Exports of butter and pigs increased rapidly from 1934:

	1933	1934	1935	1936
Exports of pigs (Thousand head)	21.8	45.3	104.8	117.0
Exports of butter (Metric tons)	9,580.0	9,671.0	12,154.0	14,629.0

GRAPH V. — *Lithuania: Cost of Production, Gross Return, Social Income.*



The price index for farm products rose from 1935, while the prices of industrial products continued to fall:

Year	Price index of farm products (1913 = 100)	Price index of industrial goods (1913 = 100)
1931	69.5	82.9
1932	58.0	71.0
1933	54.2	67.8
1934	47.9	58.2
1935	53.1	57.0
1936	63.1	65.2

Working expenses fell considerably from 1928-29 to 1933-34. From the latter date they fell still further, and the social income increased more rapidly than the gross return.

Index Numbers.

(1928-29 = 100)

Year	Gross return	Social income
1933-34	52	57
1934-35	49	51
1935-36	52	60
1936-37	59	68

Latvia.

The trend of the cost of production, gross return and social income was practically the same in the three provinces of Zemgale, Kurzeme and Vidzeme; Zemgale, in the eastern part of Courland, is more fertile than both Kurzeme, the mountainous part of Courland, and Vidzeme, in the north of the country. Having fallen in 1931-32 more rapidly than the cost of production, the gross

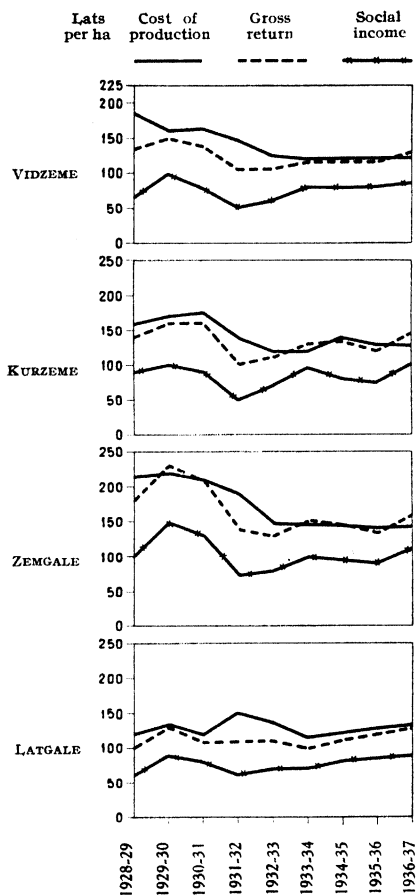
Prices of Farm Products.

(Lats)

Year	Wheat qm.	Rye qm.	Pigmeat qm.	Milk qm.	Butter kg.
Vidzeme 1932	25.85	21.78	58.86	10	1.55
1933	25.39	20.01	73.58	9.35	1.60
1934	19.90	15.49	65.59	9.39	1.56
1935	16.55	13.36	52.79	9.36	1.59
1936	16.55	13.95	75.31	9.60	1.64
Kurzeme 1932	24.69	20.94	60.75	10	1.55
1933	25.43	19.55	73.56	9.18	1.57
1934	18.97	14.44	66.74	9.37	1.56
1935	16.44	13.30	54.86	9.23	1.57
1936	16.88	13.86	76.20	9.35	1.60
Zemgale 1932	23.86	20.88	60.16	10	1.52
1933	24.29	18.93	74.70	9.29	1.56
1934	18.59	14.30	66.61	9.24	1.53
1935	15.38	12.49	53.08	9.21	1.57
1936	15.31	13.04	74.92	9.41	1.62
Latgale 1932	23.58	20.24	60.99	12	1.41
1933	22.69	18.11	74.58	11.23	1.42
1934	17.66	13.31	68.70	10.64	1.36
1935	14.40	11.68	53.03	10.36	1.38
1936	15.49	13.15	71.58	10.49	1.46

return rose from 1932-33, passed the cost of production in 1933-34 (Kurzeme and Zemgale farms), fell in 1935-36 below the cost of production and recovered in 1936-37 to a point which enabled the peasant to make an appreciable profit.

GRAPH VI. — *Latvia: Cost of Production, Gross Return, Social Income.*



The prices of pigmeat rose considerably in 1933. In the following year the prices of milk improved in the Vidzeme and Kurzeme areas. In 1935 butter prices were firm while the prices of all other farm products fell.

The recovery was general in 1936-37. In this year the farmers of Kurzeme and Zemgale made a profit of 9 to 10 lats per 100 lats gross return. That made by the peasants of Vidzeme was much smaller.

Profit or Loss on Total Farm Assets per 100 lats Gross Return in Latvia.

	1933-34	1935-36	1936-37
Zemgale	6.61	— 1.55	10.76
Kurzeme	8.81	— 7.70	8.69
Vidzeme	— 4.00	— 3.94	2.78
Latgale	— 16.01	— 7.21	— 2.74

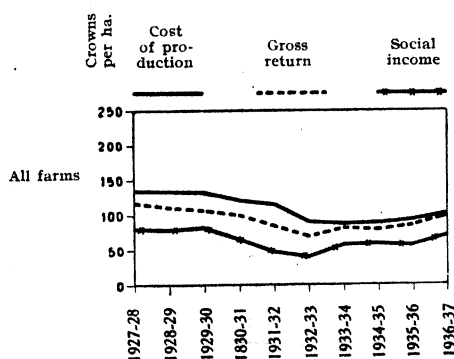
In Latgale the gross return did not fall in 1935-36; since 1933-34 the gross return has increased steadily, without however, exceeding the cost of production. The peasants' losses became smaller year by year. The social income from farms in this area fell in 1931-32 although there was no reduction in the gross return; this was due to the increase in working expenses. From 1933-34 the social income did not rise in as great a proportion as the gross return, working expenses having a tendency to increase.

In the Vidzeme area also the social income did not fall in 1935-36. In the next year it rose less rapidly than the gross return. In the Kurzeme and Zemgale areas it showed two heavy falls, in 1931-32 and in 1935-36; and in 1936-37 it rose in almost the same proportion as the gross return.

Estonia.

The cost of production fell from 1929-30 to 1932-33, but in a smaller proportion than the gross return. During these three crisis years farmers' losses increased by more than a half.

GRAPH VII. — *Estonia: Cost of Production, Gross Return, Social Income.*



Loss on Total Farm Assets per 100 crowns Gross Return in Estonia.

	1927-28	1928-29	1929-30	1930-31	1931-32	1932-33
Farms in all parts	— 12.04	— 12.91	— 14.79	— 20.27	— 37.63	— 29.49

There was a sudden improvement in 1933-34, prices, and specially those of flax, butter and animal products, having risen steeply. Pig production has been greatly developed in Estonia, while the number of cattle rose from 512.6 thousand head in 1923 to 668.9 in 1931 and to 731.1 in 1936. Exports of butter rose, after falling in 1933.

Year	Exports of butter (Metric tons)
1927-31	12,400
1932	12,531
1933	9,224
1934	10,118
1935	10,838
1936	10,955
1937	13,180

The rise in the prices of butter and animal products has therefore had a very satisfactory affect on the final figures for farms. The price of farm products fell again in 1934-35, dragging down with then the gross return. From 1935-1936 the prices of farm products began to rise again:

Prices of Farm Products.

(Crowns per 100 kilogrammes)

	1929-30	1930-31	1931-32	1932-33	1933-34	1934-35	1935-36	1936-37
Rye	13.8	13.8	15.4	14.1	12.0	11.4	12.3	13.6
Wheat	23.1	19.4	19.8	19.4	19.1	15.4	16.9	22.3
Oats	12.9	9.6	9.8	9.8	10.9	8.3	9.3	13.2
Linseed	25.6	12.9	11.5	14.1	18.5	—	19.5	17.9
Linen yarn	96.6	58.5	43.9	46.0	73.0	109.0	115.0	109.8
Butter	269.0	202.3	151.5	106.8	145.2	125.8	146.7	165.0
Pigmeat	116.0	81.0	51.0	50.3	61.7	42.8	48.2	79.3
Beef	62.0	51.0	39.0	26.9	30.8	35.8	33.0	40.7

The big rise in the prices of farm products in 1936-37 was not sufficient to raise the gross return to the increased level of the cost of production. Nevertheless, peasants' losses were considerably reduced, rising from 5.67 crowns per hundred crowns gross return in 1933-34 to 8.34 in 1934-35 and to 9.29 in 1935-36 to fall to 3.69 in 1936-37.

During the crisis years the social income fell in a greater ratio than the gross return; from 1933-34 it rose in the same proportion as the gross return.

Index Numbers of the Gross Return and Social Income.

	1929-30	193-310	1931-32	1932-33	1933-34	1934-35	1935-36	1936-37
Gross return	97	83	70	60	68	68	72	84
Social income	100	79	58	52	69	69	70	84

J. DESLARZES.

INTERNATIONAL CHRONICLE OF AGRICULTURE

UNITED STATES

The agricultural situation in the United States was completely upset in 1937-38 by a combination of plentiful crops with a heavy decline in industrial activity. In 1938-39 it became even worse, in spite of a marked revival in industry, which began in the summer of 1938.

The index number of industrial production (1929 = 100), which had fallen to 66.7 in the first and to 64.4 in the second quarter of 1938, rose again to 73.4 in the third and to 84.9 in the last quarter. Industrial employment recovered from the low level reached in June 1938, and the indices (1929 = 100) of the numbers employed and of the hours worked, which stood respectively at 77.0 and 55.9 in June 1938, rose to 86.0 and 67.3 respectively in December. This improvement continued through the first half of 1939. Wholesale prices have declined. The Bureau of Labour index number fell for all commodities from 86.3 in 1937 to 78.6 in 1938; for farm products, from 84.4 to 68.5; and for other commodities, from 85.3 to 81.7. During the first quarter of 1939, compared with the first quarter of 1938, there was a further decline, the figures for the first quarter of 1938 and the first quarter of this year respectively being: for all commodities 80.1 and 76.8; for farm products 70.6 and 66.7; and for other commodities 83.3 and 80.3. It may be seen from these figures to what extent the decline in the general level of wholesale prices during 1938 and 1939 was accentuated by the rapid fall in the prices of agricultural products.

Considering the relations between supply and demand on the market for agricultural products, both in the United States and in the world generally, such a decline was natural enough. The 1938 crops were again abundant, and in the United States large surpluses had to be disposed of either at home or abroad. The home market, however, had greatly contracted during the recession, and the revival in 1938 was too brief and uncertain to restore the purchasing capacity of the consumers and the normal demand of the industries for raw materials, let alone to expand it sufficiently for the absorption of greatly increased supplies. The world market, already restricted in its extent and cramped in its functioning by trade barriers and by the increasingly strained state of international relations, was glutted by abundant supplies, especially of such staples as wheat and cotton.

The operation of the 1934 Reciprocity Trade Programme registered an important success in November 1938 in the signing of the agreements with the United Kingdom and Canada. Yet these, as well as most previous agreements, though very important in many respects, more particularly with regard to trade in industrial products, did not open anything like sufficient outlets for the enormous surpluses of agricultural products which had to be exported. The disparity between supply and demand again became alarming. The prices of agricultural products declined severely and the stocks of the principal staples increased.

A few figures, showing the diminution in U. S. A. exports in 1938-39, as compared with 1937-38, will illustrate the situation. The net exports of wheat during the first eight months (August-March) of the 1938-39 season amounted to 64,144,000 bushels of 60 pounds compared with 69,679,000 bushels during the same months of the preceding season, and this in spite of a considerable extension of export subsidies on wheat and flour. In the case of products the exports of which were not subsidised the situation was very much worse. Thus the net exports of corn (maize) during the first five months of the 1938-39 season (November-March) amounted to 22,971,000 bushels as against 43,624,000 bushels during the corresponding period of the 1937-38 season. Cotton exports during the first eight months of the 1938-39 season (August-March) amounted to 2,980,000 bales of 478 pounds compared with 5,127,000 during the same period of 1937-38.

There naturally resulted a large increase in the stocks of all these three commodities. In May 1939 the visible stocks of home-grown wheat in the United States amounted to 74,851,000 bushels, against 43,191,000 in May 1938, and 26,253,000 in May 1937. Stocks of corn (maize) were respectively 39,262,000, 40,704,000 and 6,697,000 bushels. In April 1939, total stocks of cotton in the United States were 14,260,000 bales, compared with 12,189,000 in April 1938 and 6,201,000 in 1937.

The heavy decline in the prices of the different groups of agricultural products in the United States during 1938 and the first quarter of 1939, is shown in the table on the following page.

The prices of agricultural products fell much more heavily than did the prices of other commodities and services. The prices of goods bought by the farmers for their farms and households, and farm wages, declined but slightly.

The index number of prices of agricultural products fell from 121 in 1937 to 95 in 1938 and 86 in the first quarter of 1939. The index numbers of commodities bought by the farmers stood at 130 in 1937, 122 in 1938 and 120 in the first two months of 1939, and those of farm wages at respectively 126, 124 and 117.

The purchasing power of the "farmer's dollar", as expressed in the ratios of prices of the commodities he sells to those of the commodities he buys, diminished accordingly from 93 in 1937 to 78 in 1938 and 77 in the first quarter of 1939.

Index Numbers of Prices of Agricultural Products

(August 1909-July 1914 = 100)

	Grains	Cotton and cottonseed	Fruits	Truck crops	Meat animals	Dairy products	Chickens	All groups
1932	44	47	82	102	63	83	82	65
1933	62	64	74	105	60	82	75	70
1934	93	99	100	103	68	95	89	90
1935	103	101	91	125	118	108	117	108
1936	108	100	100	111	121	119	115	114
1937	126	95	122	123	132	124	111	121
1938	74	70	73	101	114	109	108	95
1938 I quarter	88	68	69	106	112	122	100	98
II »	79	70	73	93	114	104	97	93
III »	66	69	77	99	118	102	109	94
IV »	61	72	71	106	110	109	127	95
1939 I quarter	66	71	78	106	115	105	92	86

The cash farm income of farmers in the United States, including Government payments, in 1938 was estimated at roughly 7,500,000,000 dollars, as compared with 8,600,000,000 dollars in 1937.

Trade agreements.

From the above outline of the agricultural situation in the United States, the fundamental importance of foreign outlets for her agricultural products is clear. During the recent period of recovery, from 1933-34 to 1936-37, the dependence of United States agriculture upon the world market was somewhat obscured, but as soon as the succession of exceptional circumstances, which reduced the production of basic food-stuffs below the needs of domestic consumption was over, this essential fact again asserted itself with full force.

The Reciprocity Trade Programme inaugurated in 1934, apart from its other objects, has always been part of the Government's general programme of economic reconstruction necessary to convert an emergency scheme into a permanent policy. Agricultural conditions during the first four years of the New Deal did not, however, make the extension and consolidation of this policy as urgent as it became after 1937-38, when the United States found themselves once again with large exportable surpluses of agricultural commodities for disposal on the world market.

From this point of view the conclusion, in November 1938, of the Trade Agreement with the United Kingdom, and of the Trade Agreement with Canada, signed at the same time, was a very important event, especially for United States agriculture.

The Trade Agreement with the United Kingdom. — To appreciate fully the importance of the agreement with the United Kingdom, it should be remembered that during the last few years, that country received roughly one-third of the total agricultural

exports of the United States, to the value of about 250,000,000 dollars a year on the average. Of the total value of the principal agricultural commodities exported from the United States the United Kingdom took the following percentages in 1929 and 1937: (1)

	1929	1937
Tobacco	54.7	42.7
Cotton, raw	20.8	25.0
Canned fruit	69.6	78.2
Hams, shoulders and sides	80.5	85.6
Lard	20.3	54.6
Canned pork	80.3	81.7
Wheat, grain	24.9	18.1
Barley	38.2	68.8

The total of United States agricultural products dealt with in the agreement is nearly 50, and the concessions stipulated in it—reductions and repeal of duties, stabilization of existing tariff rates and extension or consolidation of import quotas—refer to no less than about 92 per cent. of the total value of United States agricultural exports to the United Kingdom. To this should be added minor gains achieved on exports to Newfoundland and to British Crown Colonies under the same agreement.

The effective range of gains achieved under the agreement by American agriculture varies considerably according to commodity.

On *wheat*, a duty of 2 shillings per quarter, which was payable since November 1932, has now been repealed, this meaning a gain of about 6 cents for every bushel of American wheat sold in the United Kingdom: a not insignificant advantage with farm prices of wheat in the United States averaging 52 cents in November 1938. Imports into the United Kingdom of American *rice* had since March 1932 been subject to an *ad valorem* duty of 10 per cent; this was converted as from January 1, 1933, into a flat rate of 1 *d.* a pound; the agreement has reduced the duty to $\frac{2}{3}$ *d.* per pound. Imports into the United Kingdom of American *yellow maize* (corn), which were free of duty, have been guaranteed against the imposition of duties for the currency of the agreement.

Lard, one of the most important American agricultural exports to the United Kingdom, had since 1932 been subject to a 10 per cent. *ad valorem* duty; this duty has now been removed, and the position of American lard in competition with other fats on the British market greatly improved; this is highly appreciated by farmers in the corn belt of the United States. The quotas of imports of American lard into the United Kingdom, which were severely restrictive, have been raised, and the continuance of the freedom of these imports from duty assured. The agreement guarantees that the existing 10 per cent. *ad valorem* duties on *pig tongues in airtight containers* and on *sausage casings*—two articles of considerable importance in American trade with the United Kingdom—shall not be increased.

United States *fruit* have also been granted important concessions. Fresh apples and pears, of which the United Kingdom is the largest importer from the United States,

(1) See for details: "Agriculture in the Anglo-American Trade Agreements" by Harry. L. Franklin, *Foreign Agriculture*. U. S. Department of Agriculture, Dec. 1938.

were since 1932 subject to a duty of 4s. 6d. per hundredweight which placed them at a great disadvantage compared with duty-free Empire products. The duties on both apples and pears have been reduced by one-third for specified periods of the year, which involves a diminution in *ad valorem* incidence of the tariff from 24.3 per cent. to 16.2 per cent. for apples and from 16 per cent. to 10.7 per cent. for pears. Duties on United States *canned fruit* have been converted from *ad valorem* to specific rates with a view to reducing their incidence, or, in some cases, abolished altogether. *Cotton*, as a raw material for industry, was free of import duty, but the agreement consolidates the position of United States cotton on the British market by ensuring that no discrimination will be made against it in future in favour of Empire products.

Tobacco, for which the United Kingdom is America's principal customer, was subject to duties varying, according to quality, from 2.35 to 2.61 dollars per pound. Since 1932 Empire tobaccos enjoyed a preference of about 50 cents per pound, which was guaranteed them until August 1942. The agreement provides that the duty on United States tobaccos shall not be raised, and that when the present guarantee to Empire exporters is due for revision the possibility of lowering it will be considered. Reductions have also been made in the duties upon *canned vegetables* and *honey*.

In addition to the concessions made upon articles imported into the United Kingdom, fourteen different agricultural commodities imported to Newfoundland and a large number of United States agricultural products imported into 33 different British colonies and possessions have also obtained various concession under the agreement.

The Anglo-American Trade Agreement, which came into force on January 1, 1939, was concluded for an original term of three years, subject to automatic continuance unless a six months notice of cancellation is given before the date of expiration of the original term.

The Trade Agreement with Canada. — While in the Anglo-American Trade Agreement all the clauses involving agricultural commodities provided for concessions in favour of United States products, the agreement with Canada often involved important concessions by the United States in respect of Canadian agriculture. This was due to the obvious necessity of compensating Canada for the actual or potential weakening of her preferential position on the United Kingdom market by the working of the Anglo-American agreement. The term and conditions of renewal of this agreement are similar to those provided for in the one with the United Kingdom.

The trade with Canada is very important, that country being responsible for roughly one-seventh of United States exports. The total trade between the two countries was valued, on the average for 1927-31, at 1,137,000,000 dollars a year. In 1937 it was worth 886,000,000 dollars. The United States exports to Canada consist chiefly of manufactured goods, while those of Canada to the United States represent principally farm and forest products, minerals and fish.

The trade between the two countries, which had been expanding in the years immediately preceding 1931 in spite of fairly high import duties levied on both sides, was in subsequent years subject to greater restriction by tariff increases in the United States.

The original Reciprocity Trade Agreement between the United States and Canada, which became effective in 1936, had already improved the situation to a certain extent, and the new agreement went very much further.

The concessions obtained by the United States for their exports to Canada naturally refer mostly to non-agricultural products, and apart from specific cases of reduction or binding of duties, consist in the removal of the special 3 per cent. excise tax levied on all United States products admitted free of duty or placed on the list of commodities on which duties are stabilized.

The number of American agricultural products on which concessions are granted by Canada is relatively limited, and consists in commodities of which the total exports from the United States to Canada in 1937 were valued at about 43,000,000 dollars. The specific items on which concessions are obtained comprise *cotton*, which is bound on the free list, *fruit and vegetables, fresh, dried and canned live hogs and meat*, chiefly *pork, poultry and eggs, feed grains (barley, oats and maize) rice* and some minor items, on which duties are reduced or previous reductions bound.

The United States, on the other part, granted concessions to Canada upon 83 per cent. of the total imports of Canadian products. Reductions of duties are granted on items which, in 1937, were valued at 121,000,000 dollars, and upon another 3,000,000 dollars worth of Canadian products existing rates are bound by the agreement. The purely agricultural commodities on which concessions are given represent an aggregate valued at 46,000,000 dollars in 1937. The principal items affected are *live cattle*, on which the duty, which was 3 cents in the 1930 tariff and 2 cents under the 1936 agreement, is reduced to 1.5 cents per pound. The import quota of live cattle, exclusive of dairy cows, is increased from 155,799 to 225,000 head. The import of dairy cows, previously limited by a 20,000 quota, is now quantitatively unrestricted. The import quota on calves is also raised from 51,933 to 100,000 head. These concessions are limited to cattle weighing 700 pounds and over, while for cattle under 700 pounds the former rate of 2.5 cents per pound is retained. Any imports in excess of the 225,000 per annum quota for cattle and the 100,000 per annum quota for calves are subject to the former duty of 2.5 cents, while all imports in excess of the maximum of 60,000 head for any quarter are subject to the full 1930 duty of 3 cents per pound. In respect of *hogs* import duties are reduced to 1 cent per pound, and other concessions are granted upon Canadian *fresh, chilled and cured pork*. Canadian *cheddar cheese* was granted a reduction of duty from 5 to 4 cents per pound, this to represent not less than 25 per cent. *ad valorem*. *Fresh and sour cream and milk*, as well as *skim milk and buttermilk*, are the other dairy products which benefited under the agreement.

Poultry and eggs, white potatoes and certain other minor items are also affected. The two countries grant each other reciprocally similar concessions in respect of *grain and grain products*.

Agricultural Adjustment Programme for 1939.

The Agricultural Adjustment Programme for 1939 was the first in which the provisions of the A. A. Act of 1939 could be fully put into effect. It was essentially similar to that for 1938, the only new feature in it being the exclusion from the total area of soil-depleting crops of home gardens, a provision aimed at enabling small farmers to improve their standards of nutrition.

The programme is based upon the establishment of national allotments for soil-depleting crops, such national allotments being then distributed among the different States, counties and individual farms according to principles laid down in the Act of 1938. Farmers co-operating in the programme, by keeping within their allotments, are entitled to fixed payments for their participation, as well as to certain advantages with regard to loans and other facilities provided for by the Act. Moreover, the programme provides for the application by farmers of specified soil-building practices, for the adoption of which they are also entitled to certain payments.

The aggregate national allotment for soil-depleting crops has been fixed at 270 to 285 million acres, roughly 5 million acres below the 1938 figure. The individual national allotments for the principal soil-depleting crops in 1939 were:

Wheat, 55 to 60 million acres; corn (maize), 94 to 97 million acres; cotton, 27 to 29 million acres; rice, 850,000 to 880,000 acres; peanuts (groundnuts), 1.55 to 1.65 million acres. For the various types of tobacco the figures were: flue-cured, 860,000 to 900,000 acres; Burley, 375,000 to 400,000 acres; fire-cured and dark air-cured, 160,000 to 170,000 acres; cigar filler and binder, 85,000 to 90,000 acres. For general soil-depleting crops, including commercial truck crops, the allotment was fixed at 145 to 150 million acres.

The only important change, compared with the area actually sown in 1938, when the acreage allotments were announced too late to become fully effective, was in wheat, the 1939 allotment being much lower than the 1938 sown area of 81 million acres, and considerably below the average of the preceding ten years, which worked out at about 69 million acres.

In accordance with the provisions of the A. A. A., the farmers participating in the 1939 programme will be entitled to soil conservation payments out of a 500 million dollars' appropriation for this purpose, and to supplementary price adjustment payments on cotton, wheat, corn and rice, out of a special appropriation of 212 million dollars granted by Congress under the A. A. A.

The rates of soil conservation and price adjustment payments for the principal crops for 1939 are as follows:

	Soil conservation	Price adjustment	Total
Wheat, per bushel	17 cents	11 cents	28 cents
Corn, per bushel	9 "	6 "	15 "
Cotton, per lb	2 "	1.6 "	3.6 "
Rice, per cwt.	10 "	12 "	22 "

For other crops, the rates of soil conservation payments were fixed at: 0.8 to 5 cents for the five different varieties of tobacco; 3 cents per bushel for potatoes and 3 dollars per ton for peanuts. For so-called "general soil-depleting crops", comprising vegetables and other crops cultivated in such a way that they cannot easily be dealt with individually, different rates of soil conservation payments have been fixed per acre, according to nature of the crop and to locality.

Farmers who exceed their individual acreage allotments are penalised by deductions, the rates of which are so calculated as effectively to discourage over-sowing.

Small farmers are exempt from compliance with acreage allotments, and are not penalised by deductions, if the areas actually sown on their holdings to specified soil-depleting crops do not exceed a certain limit. For wheat and corn this limit is 8 acres.

The soil-building and diversion programme of 1939 was essentially similar to that of the preceding year, except that it put even greater stress upon the diversion of agricultural land from crops to grass. In this respect, special attention was paid to the region of the Great Plains, which was particularly affected by soil erosion, especially in its southern part comprising the States of Kansas, Oklahoma, Texas, New Mexico and Colorado. The 1939 programme provided that soil conservation districts or State-controlled associations organised in the Southern Great Plain with a view to carrying out schemes for combatting wind erosion would be considered as agricultural producers and entitled to A. A. A. payments in respect of all land held and operated by them either as owners or as tenants, on which they apply soil-building or diversion programmes. In order to enable such organisations to finance their operations, the Farm Secu-

rity Administration was authorised to make them loans up to 90 per cent of the estimated amount of A. A. A. payments they were to receive. This measure was expected to permit large tracts of agricultural land, either abandoned or belonging to absentee owners, to be taken over by soil conservation districts or associations and restored to fertility.

The programme provides for penalties, in the form of heavy deductions from the A. A. A. payments, for failure to protect restoration land from erosion or for diverting it to crops.

For the first time, the 1939 programme puts into effect the provision of the A. A. A. of 1938 which limits to 10,000 dollars the amount which can be paid under that Act to any individual, partnership or corporation in soil conservation or price adjustment allowances.

A special agricultural adjustment programme has also been announced for 1939, in respect of the Insular Region, which comprises Alaska, Hawaii and Puerto Rico. The programme is generally similar to that for 1938, and special importance is attached in it to soil-building practices. The soil-building allowance on non-crop pasture and range land is increased from 20 to 40 cents per acre, except for farms with over 1,000 acres of such land, on which a lower rate of 10 cents is paid. Small farmers are granted larger per acre allowances for soil-building practices, the rates applicable to them on crops, ranges and pastures being nearly four times as high as those payable to large farmers. With regard to soil conservation, the programme continued acreage allotments for tobacco in Puerto Rico and introduced, at the request of the producers themselves, an acreage allotment for rice in the Hawaii.

The *Marketing Agreements Act* of 1937, which re-enacted and amended the provisions on this subject contained in the original A. A. A. of 1933, has been widely applied to products which could not conveniently be dealt with by the expedient of acreage allotments, and more particularly to milk and to vegetables and fruit. In the case of milk, the prices payable by dealers to producers of milk were regulated by marketing orders. In the case of vegetables and fruit, the fixing of minima prices was not considered expedient, and the Act provided only for the posting of prices as a means of keeping the producers informed about the price situation.

The application of marketing orders gave rise to considerable litigation which began in the autumn of 1937, soon after the Marketing Agreements Act came into force. The situation became particularly involved with regard to milk, as dealers impugned the right of Congress to fix the prices they had to pay to the producers. The Federal Government obtained a temporary injunction, which enforced the provisional observance by the dealers of the marketing orders pending legal decision; but while the question is under litigation, and an adverse decision of the Supreme Court may invalidate the provisions of the Act of 1937 bearing upon marketing orders, which are an essential instrument of price control for certain products, the whole scheme of regulation by marketing agreements and orders is in a precarious position.

Wheat market.

The situation on the wheat market in 1938-39 called for urgent attention on the part of the Federal Government. As the area sown to wheat in 1937-38 was over 80,000,000 acres, to be compared with an annual average of 69,000,000 acres for the preceding ten years, even an average yield could bring about a collapse in prices and farmers' incomes. The production of wheat, which was 874,000,000 bushels

in 1937, amounted to 940,000,000 bushels in 1938, and a reaction in prices was unavoidable. Indeed, the average price received by farmers for wheat on local markets in the United States, which was 93.0 cents per bushel in September 1937, was only 52.5 cents per bushel in September 1938.

The farmers' income from wheat also suffered a heavy reduction, in spite of the large increase in the quantities marketed. A recent estimate puts the gross income of United States farmers from wheat at 464,495,000 dollars in 1936, 617,547,000 dollars in 1937 and 440,018,000 dollars in 1938.

By the Agricultural Adjustment Act of 1938, machinery was created for controlling production and facilitating the disposal of surpluses in an orderly manner. This machinery consisted of acreage allotments, and of a series of measures, such as commodity loans, marketing quotas and the crop insurance scheme, which constitute the so-called Ever-Normal Granary. The machinery of the A. A. A. of 1938 could not have had full application to the 1938 wheat crop, as the winter wheat had already been sown when the Act was passed, and preparations for spring sowing were already far advanced. In spite of the expectation of a heavy crop, marketing quotas were not put into effect, so that, for practical purposes, the new law was only partly operative.

In June 1938, wheat loans at rates averaging between 59 and 60 cents. per bushel were announced. The loans represented 52 per cent. of the farm parity price of 1.14 dollars per bushel and were granted by the Commodity Credit Corporation on the recommendation of local A. A. A. Committees, which were made responsible for the grading and inspection of wheat stored on farms, as distinguished from that deposited in approved warehouses.

Partly owing to the impossibility of applying fully to the 1938 crop the provisions of the A. A. A., partly because of the extremely difficult situation on the market, emergency measures have had to be applied on a very large scale for the disposal of the available supply of wheat.

The Federal Surplus Commodities Corporation had to intervene on a large scale, buying wheat on the market for distribution through relief organisations to the unemployed and needy. The programme of surplus winter wheat purchases by the F. S. C. C. was announced in July, and a similar programme for spring wheat was published in September 1938. The wheat so bought was intended for charitable distribution. Since then, numerous purchases have been made; and in March 1939 it was announced that the F. S. C. C. would purchase all wheat held under the 1938 loan programme which remains at the disposal of the C. C. C. after June 1939. The quantity of wheat held by the C. C. C. in March 1939 was 81,000,000 bushels.

Apart from purchases for relief distribution, the F. S. C. C. was entrusted in 1938-39 with purchases of wheat for subsidised export abroad. In August 1938 the Secretary of Agriculture announced the new wheat-export programme, which provided for the export in 1938-39 of a total of 100,000,000 bushels of United States' wheat. It was later announced that it was the intention of the Federal Government to keep wheat exports stable at this figure, having recourse, if necessary, in years of poor crops, to the reserves of the Ever-Normal Granary. In 1938-39 this policy was to be put into effect by the F. S. C. C. Any losses on wheat so exported would be made good out of the special allocation of 30 per cent. of customs receipts, which is made available for programmes of removal and disposal of surplus farm products. In order to set the operations going, the F. S. C. C. was granted a loan of 30,000,000 dollars by the Reconstruction Finance Corporation. The programme of wheat exports was supplemented by a parallel programme for subsidised exports of wheat flour, which was announced in September 1938. Assisted exports of wheat flour up to 5,000,000 barrels were

to be effected by F. S. C. C. in 1938-39, on the same basis as those of wheat. In October 1938, the wheat-flour export programmes in operation, namely the new one and that in operation in the last few years for the export from the States of Washington, Oregon and Idaho of specified quantities of wheat flour to the Philippine Islands, were merged, all business being transferred to the F. S. C. C.

The A. A. A. programme for 1939 was announced in November 1938. It applied to the winter wheat sown in the autumn of 1938 and to the spring wheat of 1939 and provided for a very considerable reduction in acreage, the acreage allotment being fixed at 55,000,000 acres, to be compared with an average of 69,000,000 acres for the preceding ten years and with as much as 81,000,000 acres sown in 1937-38. Wheat-growers not exceeding the allotments were eligible for wheat loans, if a loan programme should be put into effect for the 1939 crop, as well as for a renewal of crop insurance policies. The payments to which the farmers cooperating in the programme were entitled consisted of the basic soil conservation payments at the rate of 17 cents per bushel and of additional price adjustment or parity payments of 11 cents per bushel out of a special allocation of 212,000,000 dollars authorised by Congress. Wheat growers who exceeded their allotments were penalised by a deduction of 50 cents per bushel: a penalty high enough to prevent any excessive expansion of cultivation.

The wheat loan programme for the 1939 crop was announced in May 1939. It provided for higher loan rates than the 1938 programme, the rates varying, according to quality of grain and to the markets to which it applies, from a minimum of 75 to a maximum of 80 per cent. of the average farm price of wheat during the last 20 years. The loans, to be made by the C. C. C., will mature on April 30, 1940.

As the prospects of the 1939 crop justified the expectation that production in 1939, though below the 1938 level, will still be in excess of the limits provided for by the A. A. A. (35 per cent. above normal requirements), a referendum was held on the introduction of marketing quotas for wheat. As 85 per cent. of the farmers voted in favour of the proposal, quotas are to be put into effect for the marketing of the 1939 wheat crop.

The *crop insurance programme*, which is for the time being limited to wheat, was put into effect for the first time in respect of the 1939 crop. The procedure for the payment of insurance premiums in kind was announced early in July 1938, and "collection warehouses" to which wheat in payment of premiums in kind could be consigned, were designated in different localities. Applications for the insurance of the 1939 crop were made by 299,501 farmers, including 204,604 winter wheat and 94,897 spring wheat-growers. With a view to facilitating the payment of premiums by the farmers, the Agricultural Adjustment Administration was authorised to pay the premiums of co-operating farmers direct to the F. C. I. C., as an advance on the benefit payments due to them under the A. A. A. of 1938.

Cotton market.

Cotton-growing occupies a peculiar position in United States agriculture and presents special problems, mainly because of its dependence on export. As over half the total cotton production has to be disposed of on the world market, in competition with "outside growths", any price policy pursued at home with a view to improving the economic position of the cotton growers in the Southern States must always take account of the competitive power of American cotton abroad. This was amply demonstrated by the experience gained since 1933 under the original A. A. A. and the

other legislation bearing on cotton. The record cotton crop of 1937, combined with the industrial recession and with the dislocation produced in world cotton trade by the conflict in the Far East, greatly aggravated the plight of the Southern farmers. The situation of the cotton growers was certainly one of the principal causes of the urgent passing by Congress of the Agricultural Adjustment Act of 1938.

The effects of the conflict in China can be judged by the fall in United States cotton exports to Japan. These exports, after having increased continually for many years, until they reached 1,600,000 bales in 1936-37, fell abruptly to 700,000 bales in 1937-38. The substitution of artificial fibres for cotton and the exceptionally rapid expansion of cotton-growing in other countries during the last few years, which was to a certain extent stimulated by the price policy of the Federal Government since 1933, tended to restrict the outlets for American cotton. The total exports of cotton from the United States, which amounted to 5,950,000 bales in 1936-37 and to 6,252,000 in 1937-38, declined sharply in 1938-39, when the quantity exported in the course of the first eight months of the season (August to March) was only 3,080,000 bales compared with 5,210,000 during the corresponding period of 1937-38.

The total income of cotton-growers from lint and seed, which averaged roughly 1,400,000,000 dollars a year during the period 1922 to 1929, fell to a minimum of 460,000,000 dollars in 1932; it then rose unsteadily to a maximum of 904,879,000 dollars in 1936, but fell in 1937, after a record crop, to 863,970,000 dollars.

The prices of American Middling in New Orleans, which averaged 11.64 cents per pound in 1935-36 and 12.78 cents per pound in 1936-37, fell to 8.87 cents in 1937-38, following a record crop and a recession in industrial consumption at home and abroad. The slight improvement in domestic demand in 1938-39, resulting from the revival of industrial activity, does not appear to have improved the price situation, and the average prices on local markets in the United States, after a slight rise in the autumn of 1938, registered a fresh reaction in the spring of 1939.

Thus the commercial situation of American cotton in 1938-39 was exceedingly bad, in spite of a large reduction in both acreage and production of fibre. The cotton acreage in the United States in 1938 was about 27,000,000 acres, or roughly 22 per cent. less than in 1937, and the production of cotton was about 12,000,000 bales of 500 pounds compared with 19,000,000 bales in 1937. But, with a carry-over of about 13,000,000 bales from past seasons, at the beginning of the 1938-39 season there were over 25,000,000 bales to be disposed of, of which roughly 7,000,000 were held by the Commodity Credit Corporation under Federal Government loans.

The national cotton acreage allotment for 1938 and 1939, fixed in 1938 at the moment when the new Agricultural Adjustment Act was passed, was between 27 and 29 million acres and provided, under normal conditions, for a production of 10 to 11.5 million bales. The actual area under cotton proved to be very near the lower of these limits, and the production exceeded the maximum only by some 500,000 bales. Yet the carry-over of past years was so large that every measure available under the A. A. A., as well as special emergency measures to deal with the surplus, had to be put into operation.

The introduction of marketing quotas for the 1938 cotton crop was announced by the A. A. A. in June. Cotton sold by any farmer in excess of his quota was subject to a penalty of 2 cents per pound, except in the case of farmers whose total production of lint does not exceed 1,000 pounds.

In order to encourage cotton-growers in keeping to the acreage goals in 1938, a special amendment to the A. A. A. provided that the distribution of price adjustment (parity) payments due under the Act on the 1937 crop would be limited to

farmers who in 1938 did not exceed their allotments. The appropriation for such payments amounted to 130,000,000 dollars.

On August 27, 1938, the A. A. A. announced the cotton loans programme for the 1938 crop. The programme provided for the granting of loans to cotton growers by the Commodity Credit Corporation at the standard rate of 8.30 cents per pound of 7/8 Middling, with allowances for other grades and staples.

In order to dispose of the large surplus of cotton which could not be marketed through normal channels, measures had to be taken with a view to developing different uses for cotton. In July 1938 the A. A. A. announced a diversion programme providing for the manufacture and sale of cotton bagging for the packing of bales of cotton. Various other experiments involving the use of cotton for technical purposes—in road making, house insulation, etc—have also been started. In January, 1939, the Department of Agriculture called a meeting of a special Committee consisting of representatives of the cotton industry and other interests, for the study of the best means of utilizing surplus cotton. The Committee's report, after suggesting, in the first instance, that measures should be taken to increase exports, insisted upon the necessity of extending research and propaganda activity with a view to developing new uses of cotton, of the substitution of cotton for imported wood pulp in the manufacture of paper, etc. Moreover, as early as September 1938 the Federal Surplus Commodity Corporation was authorised to purchase up to 50,000 bales of cotton and up to 14,000,000 yards of cotton fabric for distribution to relief organisations for mattresses and comforters. The total sum assigned to such purchases was limited to 3,500,000 dollars.

The marketing quota regulations for the 1939 cotton crop were announced by the A. A. A. in May 1939. They are substantially similar to those for 1938, except for an increase from 2 to 3 cents per pound of the penalty for sales in excess of the quota. The increased penalty applies to the 1939 crop, 2 cents being still payable for excess sales of last year's carry-over.

NEW ZEALAND

The prosperous state of New Zealand in 1937 continued into 1938, despite the low prices of wool—one of the principal export goods of the country—and the signs of a falling off in the manufacturing industries which made their appearance early in the year. Unemployment figures fell from about 8,000 in January 1938 to 1,000 in January 1939. Revenue remained buoyant and there was an increase in private spending. In the autumn of 1938, however, difficulties were beginning to make themselves felt. The value of wool exports, owing to the low prices fetched in 1938, was some £NZ 6,500,000 less than in the previous year, and this was only partially offset by better prices for dairy produce and meats; with the result that there was a net reduction in the value of exports of nearly £NZ 3,000,000. At the same time imports rose in value by over £NZ 7,000,000. In consequence, the export surplus fell from about £NZ 14,000,000 in both 1936 and 1937 to some £NZ 4,000,000 in 1938—well below the balance required for interest services on overseas loans.

To meet the situation the Government instituted a rigorous system of exchange control. Goods could be imported and exported only under licence, the regulations obliging the Reserve Bank to give sterling in exchange for its notes were suspended, and exports of capital were only permitted with the consent of the Government.

While the immediate and primary object of these regulations was to increase the funds of the Reserve Bank by reducing imports, the Government explained that they also had in view the " insulation " of New Zealand from recessions in overseas markets.

Such insulation would have very far-reaching consequences for the economic structure of the country, and not least for agriculture. Without some form of regulation, however, New Zealand is left very susceptible to cyclical fluctuations on world markets, owing to her great dependence on international trade. At the same time it must be remembered that only wool has to face the full effects of world competition. By far the greater part of New Zealand's dairy produce and meat exports are taken by the United Kingdom, and in both cases the marketing conditions are to some extent stabilized by the existence of quota regulations, though against this must be set the tendency for imports to be reduced as a result of recent modifications in British agricultural policy.

In 1938, of the total value of all exports of £NZ 58,376,000 wool contributed £NZ 12,185,000, butter and cheese £NZ 22,455,000 and mutton and lamb £NZ 11,176,000. These products together made up about 78 per cent. of all exports. Thus New Zealand is almost entirely dependent on agriculture in her international trade, the more so as the remaining 21 per cent. of exports consist largely of other less important agricultural products such as fruit, sheepskins, etc.

The general index of export prices which, as a result of this great predominance of agricultural products in the export trade, gives a reasonably accurate picture of the level of agricultural prices, rose from 125.0 in 1936 (average 1909-1913 = 100) to 144.0 in 1937 and then fell slightly, to 136.7 in 1938. The index of import prices, on the other hand, rose throughout the period, from 133.2 in 1936 (1909-1913 = 100) to 140.2 in 1937 and to 142.5 in 1938; and in general costs showed an upward tendency, wages also continuing to rise from their old depression levels, largely as a result of the Government's social policy. Thus the index for wages of farm labourers increased from 90.3 in 1936 (average 1926-1930 = 100) to 107.1 in 1937 and to 110.4 in 1938. There was therefore some tendency in 1938 for the margin between costs and returns in agriculture to narrow.

Dairy produce market.

As we have remarked in a previous article ⁽¹⁾ the dairy industry is now regulated under the provisions of the *Primary Products Marketing Act*, 1936. Under this Act a Primary Products Marketing Department was set up which buys directly from the producers, all butter and cheese and certain other milk products intended for export at a price which under the present arrangement is fixed at the beginning of each season. The proceeds from the sale of the butter, etc. abroad then accrue to the account of the Department, which is lodged with the Reserve Bank. The relationship between the market price and the guaranteed price will therefore determine whether a surplus or deficit will be sustained, the Reserve Bank being empowered to grant overdraft facilities in the latter case.

⁽¹⁾ See *Monthly Bulletin of Agricultural Economics and Sociology*, March 1938, International Institute of Agriculture. A review of the working of the scheme since its inception will be found in the *Bulletin Commercial Belge*, January 11, 1939.

In the first season of the Act, 1936-37, there was a deficit of some £NZ 384,000 on butter, and a surplus of about £NZ 126,000 on cheese. Allowing for the small deficit on whey butter, this gives a final deficit for the year's trading of about £NZ 272,000. In 1937-38 both butter and cheese yielded a surplus amounting in all to £NZ 555,000. In the present season the final deficit is expected to be well over £NZ 1,000,000.*

Prices and Exports of New Zealand Butter.

Year	Guaranteed price (1) per cwt finest quality (Shillings sterling)	London price (1) per cwt (Shillings sterling)	Volume of exports (Cwt)	Value of exports (£NZ.)
1936	106/6	103/8	2,769,145	15,317,576
1937	115/-	120/6	2,976,085	16,986,477
1938	124/- (2)	115/8	2,614,549	16,520,226

(1) Season August-July commencing in the year given.

(2) Average for the 11 months August-June.

The most notable feature in the above table is the increase in the market prices of butter in 1937 and 1938 over the 1936 figure. As a result the value of butter exports in 1938 exceeded that in 1936 despite the smaller volume exported in the former year. The increase in prices is to be attributed to some extent to the improvement in quality and greater standardization brought about by the new method of marketing; New Zealand butter has in fact been selling at a premium on the London market since the introduction of the scheme. Similar conditions are found in the case of cheese, the value of which rose from £NZ 5,122,438 in 1936 to £NZ 5,935,061 in 1938 while the volume of these exports fell from 1,658,206 hundredweight in the former year to 1,610,523 hundredweight in 1938.

Parallel with these increases in price, however, costs have also been rising, largely as a result of the increased cost of labour under the Government's social legislation. In 1938 an Order in Council raised minimum wages for workers on dairy farms, the rates of increase varying between 10 and 15 per cent. Further, share-milking agreements, under which the farmer contracts to share the proceeds from his dairy farming operations with an other party in return for labour services, were regulated by Act of Parliament (1), the minimum conditions which the farmer might offer to the share-milker being laid down; in particular the share-milker was to receive not less than 25 per cent. of the proceeds from the marketing of the farm's dairy produce.

(1) Share-milking Agreements Act, 1937. Published March 1938.

On the other hand the fall in production cannot be explained by a decrease in the profitability of dairy farming, for the margin between costs and earnings has been kept at a satisfactory level by the guaranteed prices, which are computed on a basis of costs. The explanation of this decrease lies to some extent in the difficulty experienced in obtaining adequate supplies of labour for dairy-farm work. In addition, weather conditions were not satisfactory in 1938, while prospects for this year are also unfavourable owing to the serious drought in the North Island. Finally there was a grave outbreak of facial eczema, affecting both cattle and sheep.

On the whole the position of dairy produce has been satisfactory, and the new method of marketing has worked well. In addition to the higher prices realized, marketing costs have been reduced by 1s 1d per hundredweight of butter. The financial consequences of the scheme are not yet clear, however. Leaving out the deficit for the first season, the responsibility for which was accepted by the Government, the Dairy Industry Account shows a net loss for the two seasons 1937-38 and 1938-39 of well over £NZ 500,000. The Government has expressed some anxiety lest this deficit should continue to increase, adding: "Heavy deficits... if repeated, must inevitably wreck the whole guaranteed price procedure."

Wool market.

Quantities of wool exported showed small declines in both 1937 and 1938, the reduction in the latter year being due in part to smaller purchases from the United States and Japan which were only partially offset by increased sales to France and the United Kingdom; and in part to the outbreak of facial eczema, which has also led to a reduction in the number of lambs. The value of exports during the last three years fluctuated widely, as the following figures show.

Exports of Wool from New Zealand.

	1936	1937	1938
Volume (bales) ⁽¹⁾	909,132	834,951	798,518
Value (£NZ).	13,293,583	19,070,240	12,185,314

There has therefore been a very considerable divergence between the value and volume of wool exports in the last three years owing to the heavy fluctuations in wool prices on the world market. These changes are in no way paralleled by the movement in wholesale prices in New Zealand, which have in fact risen over the same period from 139.9 (average 1926-1930 = 100) to 150.0 and to 151.4. These fluctuations have

⁽¹⁾ One bale of raw wool = 350 pounds.

a disturbing effect upon the economic position of the country, since wool is one of the principal export products, representing, like dairy produce, some quarter of the value of all exports; and the farmer's position is also rendered uncertain. The Government have recently expressed their readiness to apply their guaranteed price system to wool and also to meat.

Meat market.

As with dairy produce, by far the greater part of New Zealand's exports of meat go to the United Kingdom. Exports of mutton and lamb, beef and bacon have all shown small increases since 1936. While the volume of exports of mutton and lamb has only fluctuated slightly, their value has increased appreciably during the last few years.

Exports of Mutton and Lamb.

	1936	1937	1938
Volume (cwt).	3,487,649	3,639,992	3,638,372
Value (£NZ)	10,089,731	11,016,387	11,175,619

The market for these products has therefore been satisfactory during the last two years. The prospects for the current year, however, are less favourable owing to the United Kingdom Government's announcement of a reduction of 3 per cent. in import quotas for mutton and lamb applying to all Empire countries.

Fruit market.

Of fruits grown in New Zealand, only apples and pears have any importance for the international markets. Meanwhile the Government introduced in 1938 a marketing scheme for the lemon crop, with a view to making the country self-sufficient in this commodity. Exports of apples and pears, which are regulated under the system of guaranteed prices, increased from 37,720,000 pounds in 1937 to 59,916,000 pounds in 1938, their value rising from £NZ 472,739 in 1937 to £NZ 772,095 in 1938. Besides the agreement mentioned in our last chronicle on New Zealand⁽¹⁾, which allowed increased exports of apples into the Netherlands, an agreement was concluded with

⁽¹⁾ *Monthly Bulletin of Agricultural Economics and Sociology*, March 1938, International Institute of Agriculture.

Switzerland in May 1938 granting New Zealand an annual quota of 1,500 metric tons of apples and pears in return for most favoured nation treatment on certain goods imported from Switzerland.

Despite the rise in exports the area under fruit trees has decreased considerably, falling from 3,089,000 trees of pip, stone and citrus fruits in 1925, and 2,665,000 in 1931 to 2,460,000 in 1937 ⁽¹⁾. This decline may be due to the increasing cost of fruit growing. The consequent rise in fruit prices has, it has been suggested ⁽²⁾, reduced the consumption of fresh fruits and caused a shift in the direction of canned varieties.

⁽¹⁾ For further details see *New Zealand Journal of Agriculture*, March 20, 1939, Wellington. No figure is available for 1938.

⁽²⁾ See *Commercial Intelligence Journal*, September 17, 1938. Ottawa, p. 468.

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FOOD CONSUMPTION HABITS IN CHINA ⁽¹⁾

SUMMARY: Introduction. — A) Chinese food-consumption habits as shown by recent family budget investigations and budgetary studies — 1. The intake of energy and various food-constituents — 2. The importance of the various foodstuffs. — B) The improvement of Chinese food consumption.

Introduction.

Fate has not assigned to the Chinese people a large area of cultivated land per head of population, from which to draw the great bulk of their food supply and of the necessary raw materials for housing, clothing and fuel. Estimates of this area vary, partly as a consequence of the differing estimates of the total population and of the total area of cultivated land, and partly according as whether China is held to consist only of the eighteen "historic provinces" of China proper or of the twenty-four provinces, or also to include the outlying dependencies of Manchuria, Outer Mongolia, Chinese Turkestan and Tibet.

If, however, we confine ourselves to the most recent figures given by Buck for "Agricultural China" — that is, China exclusive of the outlying dependencies and of the desert and highly mountainous regions outside the main area of cultivation ⁽²⁾ — we find that the territory so defined covers about 3.5 million square kilometres and has to support almost all of China's probable 450 million inhabitants. The cultivated area would then amount only to about one fourth of the gross area, and the area of cultivated land per head of population would probably be less than 0.2 hectare ⁽³⁾.

The area of cultivated land per head is thus very much smaller in China than in most western countries. Furthermore, whereas most western countries

⁽¹⁾ The first article of this series was published in the September 1938 number of the *Monthly Bulletin of Agricultural Economics and Sociology*.

⁽²⁾ BUCK, J. L.: *Land Utilization in China*. Chicago, 1937, p. 24.

⁽³⁾ According to the estimate of Buck (*Land Utilization in China*, pp. 362-365) the area of cultivated land in "Agricultural China" per head of the farming population, which represents about 75-80 per cent. of the total population, amounts to 0.25 hectare, so that the area per head of the total population probably does not exceed 0.18-0.19 hectare. In "Agricultural China" as defined by Cressey, which differs somewhat in extent from the "Agricultural China" of Buck, the area of cultivated land per head of total population is estimated at 0.17 hectare (CRESSEY, G. B.: *China's Geographic Foundations*, New York and London, 1934, p. 23).

have large areas of grazing land and great industries giving employment to considerable sections of the population, in China the area of grazing land is very small ⁽¹⁾ and about four-fifths of the population must depend on the output of a restricted area of cultivated land as almost their sole means of support. This area of cultivated land per head of population is, however, not only much smaller than is usual in the west, but is also very much below that generally considered necessary for furnishing a diet quantitatively and qualitatively satisfactory from the prevailing western point of view. Furthermore it even falls very much short of the cultivated area of nearly half (0.48) a hectare per head estimated by the United States Bureau of Agriculture to be necessary for furnishing a "restricted diet for emergency use", *i. e.* a diet containing very little animal food, and designed to help very poor and destitute people over a comparatively short time of privation, but "not considered adequate for use over an indefinite period" ⁽²⁾.

The small area of cultivated land per inhabitant and the insignificant amount of grazing land are, however, not the only factors unfavourably influencing the food supply of the Chinese people. Disastrous floods and droughts especially in North China, often reduce the agricultural output over large regions, besides which the output suffers from the almost complete absence of control of insects and diseases, the fragmentation of holdings, the use of inferior seeds and the insufficient use of fertilizers. Furthermore, owing to excessive parcellation holdings have become too small (1.7 hectares average area) to afford employment all the year round to the numerous members of the average Chinese peasant family, and this combined with the scarcity of subsidiary employment condemns the country population to long periods of enforced idleness each year ⁽³⁾.

In spite of the hampering effects on agricultural production of all these drawbacks, China has succeeded in becoming almost self-sufficient as regards her food supplies. As will be seen in the following chapter, she produces in normal years – that is, years relatively free from floods, droughts, animal and plant diseases etc. – a quantity of food which, if equally distributed, would satisfy the requirements of her population. While she has generally been a net importer of foodstuffs, it should be observed that the energy represented by this net import is a very small fraction of the total amount of home-produced food energy. Besides, the net imports of the main foods, such as rice, sugar, wheat and wheat flour, could no doubt have been easily supplied by the Chinese soil, were it not for the serious lack of communications, which makes imported products less expensive in the coastal regions. Also it is more economical for China to produce export surpluses of certain crops in order to import other products in exchange, than it would be to attempt to satisfy di-

(1) BUCK J. L.: Land Utilization in China p. 172.

(2) STIEBELING, H. K.: Food Budgets for Nutrition and Production Programmes. U. S. Dept. of Agriculture. Misc. Publications No. 183, 1933, p. 2.

(3) BUCK J. L.: Land Utilization in China, p. 268.

rectly all her own needs as regards foodstuffs. It should also be observed that the value of China's total exports of foodstuffs and agricultural raw products as a rule considerably exceeds the value of the corresponding products imported.

That China, notwithstanding all the adverse factors mentioned, is able to produce, on the whole, enough food to cover the energy requirements of her people is mainly to be attributed to three circumstances: the climatic conditions of the country, which make it possible for nearly two-thirds of all cultivated land to be double and treble cropped ⁽¹⁾, the unremitting toil and energy of the farmers in the care of their plants and in the conservation of soil fertility, and, above all, the use made of the farm land and its products. Of all farm land in "Agricultural China" only about one per cent. is devoted to pasture or artificial meadows, whilst about another 10 per cent. are utilized for farmsteads, roads, ponds, graves of ancestors, forests and grass and bushland for the production of fuel. The remaining 90 per cent. of the land is devoted to the growing of food and fibre crops intended for direct human consumption ⁽²⁾ rather than for crops to be converted wholly or partly into animal foodstuffs. By the latter process only five to twenty per cent. of the energy value of the feed would be recovered in the form of meat, milk or eggs, with a loss of protein no less considerable ⁽³⁾; so that the Chinese practice is clearly much the more economical.

Thus, as the investigations of Buck show, of China's two most important cereal crops, rice and wheat, practically nothing except the separated bran is used for the feeding of animals. Indeed, only two seed crops, barley and black soya beans, are used to any considerable extent for feed purposes, and then only a relatively small portion of the crop land is devoted to these two products. Roots and tubers which are so widely used in western countries for fodder are used for such purposes in China only in insignificant proportions; whilst a good part even of the leaves of some of these crops, such as radishes and taro, are utilized not for animal feed but for human consumption ⁽⁴⁾.

Feed for farm animals in China is almost wholly made up of agricultural waste and by-products, the supply of which, however, is also devoted to other purposes: oil cakes, for example, are used for fertilizers, and straw and stalks for building purposes and for fuel, only the ashes being restored to the soil. This naturally further restricts the Chinese farmer's possibility of rearing livestock other than the necessary oxen, buffaloes, mules and donkeys for draft purposes. In fact animals kept principally for their meat, milk, eggs etc. — mainly pigs and poultry, in North China also sheep — form in terms of animal units on the basis of food consumed per animal, only about one fourth of the total livestock, against

(1) BUCK, J. L.: *Land Utilization in China*, p. 11.

(2) *Ibidem*, p. 172.

(3) MIDDLETON, M. H.: *Food Production in War*. Oxford, 1923, p. 60. — HALL, A. D.: *The Feeding of Crops and Stock*. Part III. London, 1937, p. 86. — SPILLMAN, W. J. and COOPER, M. O.: *Human Food from an Acre of Staple Farm products*. U. S. Dept. of Agriculture. *Farmer's Bulletin* 877, 1917, p. 4.

(4) BUCK, J. L.: *Land Utilization in China*, pp. 236-238.

about 85 per cent. in Germany, 90 per cent. in Great Britain and 78 per cent. in the United States ⁽¹⁾.

However, it does not follow from what has been said above that the situation of the great mass of the Chinese people is also satisfactory in respects other than the energy content of their food. Far otherwise indeed, for the standard of life of the majority of the Chinese people, both rural and urban, is pitifully low. Nor does it follow, even in relatively normal years, that in all sections of society, or in all parts of the country, the intake of energy is always adequate in quantity and in quality to fulfil physical requirements. That this is far from being the case will be seen in the following pages, where Chinese food consumption habits will be studied in greater detail. For this purpose we shall make use of a number of family budgets and dietary studies carried out during recent years in various parts of China, among farmers, urban labour and middle-class families ⁽²⁾.

A. — Chinese food consumption habits as shown by recent family budget investigations and dietary studies.

The most important data of these investigations have been brought together in the following three tables: Table I, showing the amounts of protein, fat, carbohydrates and calories as well as the quantities of calcium, phosphorous and iron supplied by the food consumed; Table II, giving the percentage distribution of the total intake of calories among different foodstuffs; and Table III, indicating the quantities of the most important foodstuffs annually consumed per adult male. For the sake of comparison, consumption statistics for three representative western countries, the United States, Great Britain and Germany, referring to the whole of the population, have also been given; owing to lack of space, however, data from certain American and German family budget investigations could be included only in the case of Table III. It will be observed that when, in the following pages, expressions like "western diets" or "western consumption habits" are used, they refer to habits prevailing in the three countries mentioned and in the more industrialized countries of Western Europe or similar non-European countries of western civilisation. In many parts of Southern and Eastern Europe, especially in the rural districts, dietary habits are in essential respects more similar to Chinese habits.

I. — INTAKE OF ENERGY AND VARIOUS FOOD CONSTITUENTS.

In western countries the total *energy intake* generally amounts to about 3,000-3,500 gross calories per consumption unit per day, varying according to

⁽¹⁾ BUCK, J. L.: Land Utilization in China, p. 250.

⁽²⁾ The most important factors limiting the value of family budget investigations and dietary studies as a basis for evaluating the food consumption habits of a country, have been stated in the September 1938 number of this *Bulletin*.

the nature of the work performed; in China the energy intake in corresponding occupations is generally below this figure. In all the town workers' and middle-class budgets included in Table I it will be seen that the total energy intake per consumption unit per day is seldom above and sometimes considerably below 3,000 gross calories, and that it is only in the farmers' families covered by Buck's extensive investigation that the average figure, which, however, covers very wide differences, rises in the case of North China to nearly 3,200, and in the case of South China, with its higher standard of life, to about 3,400 calories ⁽¹⁾. Yet even these higher figures are, on the whole, below the energy intake among the farming population in the western countries.

If, however, we compare not only the number of calories ingested (gross calories) in China and in the west, but also the number of calories utilized or absorbed by the organism (net calories), the difference in this respect between the two diets is probably still greater; for the nutritive content in animal foodstuffs, in which western food is proportionately much richer, is generally utilized to a greater extent by the human organism than the nutritive content in vegetable foodstuffs. The insignificant role played by animal foodstuffs in the Chinese diets as sources of energy will be seen from Table I. Whereas in the diets of the more industrialized countries of western civilisation about 30-40 per cent. of the total calories consumed are furnished by animal foodstuffs, the corresponding percentages among South China day-labourers probably amounted to nil, among North China farmers and Peiping (Peking) labourers to 1 per cent., among South China farmers, who enjoy a higher standard of living than those in North China, to 3.6 per cent., among Shanghai labourers to 4 per cent., and among Peiping teachers to about 7 per cent. Only in the diet of Nanking middle-class families, to judge from the relatively large consumption of animal protein, does the supply of energy from animal sources approach western figures.

Though lower than in the west it will, however, be observed, that the intake of energy in most of the Chinese diets included in the table is well above the 2,800 gross calories found adequate by the American Red Cross in its practical experience with 20,000 Chinese road labourers ⁽²⁾. The smaller energy supply as compared with western countries—when not due to poverty—is principally to be explained by the lower basal metabolism of the Chinese and their smaller body weight. Thus the average weight of an adult male in North China amounts to about 60 and in South China to 54 kilogrammes ⁽³⁾, whereas among the Teutonic peoples the average weight of a male of 30 years of age is about 70 kilogrammes and among the Latin peoples 64 kilogrammes ⁽⁴⁾.

⁽¹⁾ Thus in about one-fourth of the 168 localities all over China included in Buck's investigations, the average daily intake of energy per consumption unit fell below 2,800 calories, while, on the other hand, in six localities it rose above 5,000. (BUCK, J. L.: *Land Utilization in China*, p. 409).

⁽²⁾ BUCK, J. L.: *Land Utilization in China*, p. 406.

⁽³⁾ ADOLPH, W. H.: *Aspects of Nutrition and Metabolism in China. The Scientific Monthly*, July, 1929, p. 39.

⁽⁴⁾ SCHALL-HEISLER: *Nahrungsmitteltabellen*. Würzburg, 1917, p. 54.

TABLE I. — *Intake of Energy and Various Food Constituents in Chinese and Western Diets.*

(Grammes per consumption unit per day)

	Whole China Farmers (1) (21 provinces) 1929-33	Northern China Farmers (1) (Wheat region) 1929-33	Southern China Farmers (1) (Rice region) 1929-33	Peiping Middle class (1)	Peiping 1926 Teachers (2)	Peiping 1926-27 Handicraft workers (3)	Nanking 1934 Middle class (4)	Shanghai Middle class (4)	Shanghai 1927-28 Factory workers (7)	Shanghai Factory workers (8)	Changsha 1924 Day labourers (9)	United States 1913-14 Whole population (10)	Great Britain 1934 Whole population (11)	Germany 1934-35 Whole population (12)
Protein	100	108	91	86.1	84.3	75.9	86.3	87	88.1	63.6	67.1	123.5	104	86
Animal	4	2.3	5.5	9.1	6.4	1.3	17.3	23	5.5	9.3	0.0	66.1	55	48
Vegetable	96	105.7	85.5	77.0	77.9	74.6	69.0	64	82.6	54.3	67.1	57.4	49	38
Fat	32	—	—	52.6	47.2	29.6	48.2	54	48.5	46.7	27.2	165.0	148	109
Animal	—	—	—	—	16.9	7.3	—	—	10.5	—	13.3	134.0	130	88
Vegetable	—	—	—	—	30.3	22.3	—	—	38.0	—	13.9	31.0	18	21
Carbohydrates	—	—	—	520.8	493.5	505.3	409.4	427	531.0	498	604.9	573.3	505	453
Calories	3,295	3,186	3,400	2,901	2,742	2,595	2,801	2,544	2,913	2,660	3,008	4,394	3,862	3,296
Per cent. of animal origin	2.3	1.0	3.6	—	6.9	1.1	—	—	3.4	—	4.1	37.5	37.2	34.0
Calcium	0.444	0.505	0.385	0.327	—	—	0.627	0.519	—	0.661	—	—	—	—
Phosphorus	2.293	2.905	1.698	1.130	—	—	3.099	1.024	—	0.918	—	—	—	—
Iron	0.027	0.033	0.021	0.016	—	—	0.077	0.016	—	0.030	—	—	—	—

(1) BUCK, J. L.: Land utilization in China. A study of 16,786 farms in 168 localities, and 38,256 farm families in twenty-two provinces in China, 1920-1933. Chicago, 1933, pp. 107, 409, 419. — (2) WU, H. and WU, D. Y.: Study of dietaries in Peking. *Chinese Journal of Physiology*, Report series, 1926, No. 1, pp. 133-52. — (3) FAO, L.: Livelihood in Peking. Peking, 1928, p. 154 and appendix V, pp. XV-XXII. — (4) *Ibidem*, p. 96 and appendix III, pp. 23-24. — (5) CHANG, CHU: On food consumption in Nanking. *Science* (Chinese), vol. 19, No. 11, Dec. 1935, pp. 1755-58. — (6) CHU CHEN-CHEN, art. in *Science* (Chinese), vol. 18, No. 9 (quoted from League of Nations. Health Organisation. Intergovernmental conference of Far-Eastern countries on rural hygiene. Preparatory studies. National Reports from League of Nations. Geneva, 1937, p. 59). — (7) YANG, S. and TAO, L. K.: A study of the standard of living of working families in Shanghai. Peking, 1931, p. 53. — (8) CHU CHEN-CHEN, art. in *Science* (Chinese), vol. 18, No. 9 (quoted from League of Nations. Health Organisation. Intergovernmental conference of Far-Eastern countries on rural hygiene. Preparatory studies. National Reports from League of Nations. Geneva, 1937, p. 59). — (9) LEE, W. Y. and READ, B. E.: art. in Chinese Medical Association. Special Report Series, No. 7 (quoted from League of Nations' publication and placed in note 6. — (10) POWELL, M.: Diet of coolies in Changsha. *Chinese Journal of Physiology*, Report Series, 1929, E. M. H., pp. 129-34. — (11) PEARL, R.: The Nation's Food. A statistical study of a physiological and social problem. Philadelphia, 1920, p. 254. — (12) LILOPO, E. M. H.: Food supplies and consumption at different income levels. *Journal of Proceedings of the Agricultural Economics Society*, Vol. IV, April 1936, p. 89. — (13) DECKEN, H. V. D.: Die Ernährung in England und in Deutschland. *Vierteljahrsschrift zur Wirtschaftsforschung*, 1937-38, No. 2, pp. 187, 194, 195.

As regards the *protein* intake in Chinese diets, the budgets included in Table I show that it ranges from the 64 grammes per consumption unit per day among factory workers in Shanghai to 91 and 108 grammes for the farmers in South and North China respectively. Thus considering the smaller body weight of the Chinese, the intake in most of the diets compares well, from a purely quantitative standpoint, with the intake in western diets, which as a rule amounts to about 80-100 grammes or more, and also with the Sherman allowance for adult maintenance of one gramme per kilogramme of body weight, nowadays accepted as sufficient by a great many nutritional experts, even when that intake is mainly or wholly made up of protein of vegetable origin.

However, as in the case of the calories intake, the comparison with western conditions is less favourable when not the amount of protein ingested but the amount of protein utilized by the organism is compared; for the protein of a bulky and preponderantly vegetarian diet like the Chinese is much less digestible than that of an ordinary mixed western diet. Whereas, according to Atwater, the degree of digestibility of protein in the latter amounts to 92 per cent., the Japanese Oshima gives a coefficient of 78 per cent. for the bulkier vegetarian diet, and MacCay estimates that a consumption of 766 grammes of rice (dry weight) per day, a by no means unusual quantity for an adult in the rice-eating part of China, may lower the coefficient to 52 per cent. (1).

As regards the nature and quality of the protein intake in Chinese and western diets, we find that whereas animal protein in western diets forms as a rule about half of the total intake of 80-100 grammes or more per consumption unit per day, it enters into most Chinese diets included in Table I only in insignificant quantities. It is, as will be seen, wholly absent in the South China labourers' diet, and amounts among Peiping labourers to only 1 gramme per consumption unit per day, among North China farmers to about 2 grammes, among South China farmers and Peiping teachers to about 6 grammes, among North China middle-class families to about 8 grammes and only in the middle class diets of Shanghai and Nanking does it reach quantities of any importance, namely about 23 and 17 grammes respectively. Thus the Chinese intake of animal protein not only falls much below that prevailing in western countries but also below the normal human requirements as stated by many of the western authorities nowadays most influential in matters of nutrition. Most of these authorities indeed claim that for adult maintenance animal protein should make up about half of the total protein intake, whilst for growing children, pregnant women and nursing mothers even greater proportions are recommended.

Although the difference between China and western countries as regards the place of animal protein in the diet is very marked, it is still more so in the case of the consumption of *fat*. Whereas in typical western budgets the total consumption of this food constituent per consumption unit per day reaches about 100-150 grammes, among Chinese farmers it amounts to no more than

(1) ADOLPH W. H.: *op. cit.*, p. 40.

32 grammes and in town budgets it varies from about 27 grammes among Changsa day labourers to 54 grammes in Shanghai middle-class families.

The fat intake in China also falls considerably below the allowances generally advocated for western peoples by such western expert bodies as the Advisory Committee on Nutrition of the British Ministry of Health who recommend 100 grammes per consumption unit per day ⁽¹⁾, or the nutritional experts of the League of Nations who suggest 80-125 grammes ⁽²⁾. On the other hand the Chinese fat intake as shown by several of the budgets in Table I does come very near the 50 grammes per consumption unit per day generally considered by nutritionists as the minimum for the peoples of tropical countries ⁽³⁾.

Chinese and western consumption habits with regard to fat, however, differ not only as regards the total amounts consumed, but also in the fact that whereas the high fat consumption in western countries is mainly of animal origin, the fat consumption in China is mainly derived from vegetable sources. According to the estimates for the total population in Germany, Great Britain and United States, the intake of fat of animal origin amounted, as will be seen from Table I, to 81, 88 and 81 per cent. (corresponding to 88, 130 and 134 grammes) respectively of the total, proportions usually met with also in recent working class family budgets from western countries. In Chinese diets included in Table I, for which data of this kind have been available, we find very different proportions. Thus, in the diet of Peiping labourers animal fat amounted only to about one fourth of the total fat intake, in the diets of the Shanghai labourers to only one fifth and in those of the Peiping teachers to little more than one third. From the small percentage of the total energy furnished by animal foodstuffs in the farmers' budgets, as shown by Table I, it may be presumed that in these cases also fat of animal origin is present in no greater proportion than in the Peiping or Shanghai labourers' budgets.

As regards the *mineral* content of Chinese diets, some information has been available only for calcium, phosphorous and iron. It is, however, generally believed that when these three minerals and iodine are present in adequate amounts, all the other necessary minerals are also sufficiently represented in the food. As to calcium it will be seen from Table I that it enters into the diet in a quantity very much below the generally accepted standard allowance of Sherman, namely of 0.68 grammes for adults weighing 70 kilogrammes ⁽⁴⁾. Phos-

(1) MINISTRY OF HEALTH. Advisory Committee on Nutrition: The Criticism and Improvement of Diets. London, 1934.

(2) Report by the Technical Commission on Nutrition on the Work of its third Session. *Bulletin of the Health Organisation*. League of Nations. Geneva, Vol. VII, N. 3, June 1938, p. 478.

(3) In the opinion of the Food Research Institute in Conoor (British India), for instance, the fat intake in India ought not to be less than 45-60 per consumption unit per day SOCIÉTÉ DES NATIONS. Organisation d'Hygiène. Rapport de la Conférence intergouvernementale des pays d'Orient sur l'hygiène rurale. Genève 1937, p. 87) and according to Nicholls not less than 50 grammes (L. NICHOLLS: Tropical Nutrition and Dietetics. London 1938, p. 59).

(4) For children the Sherman standard amounts to 1 gramme, for pregnant women and nursing mothers to 1.5 grammes.

phorous, on the other hand, is present in most budgets in amounts considerably above the Sherman standard of 1.32 grammes for this mineral, and iron appears in all budgets in a marked surplus over the allowance of 0.012 grammes proposed for this mineral by the same authority. Comparison with the actual intake of these minerals in countries of western civilisation shows that the supply of iron and phosphorous in the Chinese food is generally greater, while the supply of calcium is generally considerably less than in western diets. Many of the poorer sections of the population in western countries are, however, no better off than the Chinese in respect of the calcium supply. Thus from the data given by Orr in his much discussed report "Food, health and income" it will be seen that in the two lowest income groups in the United Kingdom comprising respectively 10 and 20 per cent. of the total population the estimated intake of calcium amounted only to 0.37 and 0.52 grammes per person per day respectively (1).

As in the case of the vitamin content of most diets, the *vitamin* content of Chinese diets can only be spoken of in very general terms. The value of many foodstuffs as carriers of the various vitamins has not been sufficiently investigated, and for several of the most important foodstuffs, we cannot yet tell exactly how the processes of milling, preservation, cooking, or how the state of maturity, the place of growth, the use of manures and fertilizers influences the vitamin content of vegetable products. The presence of obvious avitaminous symptoms can naturally tell us if the intake of a given vitamin has been too small over a prolonged period. On the other hand, the absence of clinical symptoms of an avitaminous nature is not a final proof of vitamin adequacy, for latent avitaminous forms, border line cases escaping recognition, may nevertheless be abundant.

However, on the basis of such information as is available it would appear from the occurrence of Xerophthalmia and other diseases resulting from a deficiency of vitamin A that the intake of this vitamin among the poorer sections of the population in the large towns and also in some rural districts is often inadequate, but it has not been shown that there is any serious deficiency in the intake of this vitamin amongst the rural population as a whole (2). The same appears to be the case with regard to vitamin B₁, the intake probably being sufficient among the farming community but often inadequate in the towns, especially in South China, where beri-beri, resulting from the consumption of polished rice deficient in this vitamin, is by no means a rare phenomenon. On the other hand, pellagra, caused by a deficiency of Vitamin B₂, is a disease hardly ever seen in China, which suggests that the intake of this vitamin in China diets

(1) ORR, J. B.: Food, Health and Income. Report on a Survey of Adequacy of Diet in relation to Income. Second Edition, London, 1937, p. 40.

(2) BUCK, J. L.: Land Utilization in China, p. 426. — LEAGUE OF NATIONS. Health Organisation. Intergovernmental Conference of Far-Eastern countries on rural hygiene. Preparatory papers: National Reports on China, Geneva, 1937, p. 55.

is probably sufficient ⁽¹⁾. Similarly the fact that scurvy, due to a deficiency of vitamin C, is apparently rare in China seems to indicate that there does not exist any serious shortage of this vitamin either, although the consumption of vegetables, which are the most important source of vitamin C, is much smaller in China than is often imagined, and the vegetables are generally cooked or preserved, by which process this vitamin is very liable to be destroyed ⁽²⁾. The intake of vitamin D, which is so important a factor in the metabolism of calcium and phosphorus and for the prevention of rickets and allied diseases of the bones, seems to be very small in Chinese diets since in these diets the content of such animal foodstuffs as eggs and butter, rich sources of this vitamin, is insignificant. A slight degree of rickets is common in Peiping, for instance, among infants during their first winter, but this seldom develops even to moderate severity; and osteomalacia, the rickets of adults, is prevalent in some very poor mountainous districts as well as among the secluded women and girls of the higher classes of Mahommedan faith. Yet neither of these diseases is frequent in China. The small intake of vitamin D with food would thus seem to be adequate, at least when it is supplemented by the amount manufactured by the body itself from the provitamin D contained in the skin under the action of the abundant sunlight available to the great masses of the Chinese population ⁽³⁾.

2. — IMPORTANCE OF THE VARIOUS FOODSTUFFS IN THE CHINESE DIET.

From the role played by the different food-constituents in the Chinese diet, we turn our attention to the place taken therein by various foodstuffs, on which the data contained in Tables II and III will give us some information.

It will be seen from these data that *cereals* deserve the name "the staff of life" in China to a much higher degree than among western peoples, furnishing, as in most other Far Eastern countries, up to 80 and 90 per cent. of the total amount of calories consumed, *i. e.* more than twice that in western diets, in which as a rule only one third or even less is supplied by cereals and cereal products.

As regards the kind of cereals consumed, there exists a marked difference between North and South China. In North China, generally speaking, wheat, millet, kaoliang and maize are the principal cereals consumed, and rice is a luxury, whereas in the southern two-thirds of the country rice is the sole outstanding cereal, being eaten three times a day by both rich and poor. It is,

(1) BUCK, J. L.: Land Utilization in China, p. 428. — LEAGUE OF NATIONS. Health Organisation. Intergovernmental Conference, etc. *op. cit.*, p. 56.

(2) BUCK, J. L.: Land Utilization in China, p. 428. — LEAGUE OF NATIONS. Health Organisation. Intergovernmental Conference, etc. *op. cit.*, p. 56.

(3) GREY, R. A. The Diets of nursing Mothers and young Children in Peiping. — *Chinese Medical Journal* (Shanghai) 1936, p. 439. — HINDHEDE, M.: Kostundersøgelser; Danmark og U. S. A. *Ugeskrift for Læger*, (Copenhagen). No. 27, 1937, p. 758. — BUCK, J. L.: Land Utilization in China p. 729.

TABLE II. — *Percentage Distribution of Energy among different Foodstuffs in Chinese and Western Diets.*

	Whole China (21 provinces) 1929-33	Northern China (Wheat region) 1929-33	Southern China (Rice region) 1929-33	Peiping Middle class (7)	Peiping 1926	Teachers (7)	Peiping 1926-27	Handicraft workers (4)	Nanking 1934	Shanghai Middle class (9)	Shanghai 1927-28	Factory workers (7)	Shanghai Factory workers (8)	Changsha 1924	Day labourers (9)	United States 1913-14	Great Britain 1934-35	Whole population (11)	Germany 1934-35	Whole population (12)
Cereals and cereal products	83.1	82.2	83.9	72.0	80.4	92.8	76.3	65.7	77.1	77.5	91.9	36.9	30	33	30	36.9	30	33	30	33
Legumes and legume products	6.7	9.5	4.0	5.0	8.0	9.8	3.4	4.3	5.4	12.5	1.2	0.9	10	15	10	0.9	10	15	10	15
Roots and tubers	5.2	5.6	4.9	3.7	4.4	2.8	4.3	3.2	3.5	1.5	2.8	4.2	10	15	10	4.2	10	15	10	15
Other vegetables	5.2	5.6	4.9	3.7	4.4	2.8	4.3	3.2	3.5	1.5	2.8	4.2	10	15	10	4.2	10	15	10	15
Fruit	0.2	0.3	0.1	0.1	0.4	0.0	0.1	1.6	0.5	0.5	0.0	2.8	3	3	3	2.8	3	3	3	3
Meat	2.3	1.0	3.6	0.8	5.4	0.9	8.1	9.3	3.0	0.4	0.0	19.9	18	17	18	19.9	18	17	18	17
Fish	2.3	1.0	3.6	0.8	5.4	0.9	8.1	9.3	3.0	0.4	0.0	19.9	18	17	18	19.9	18	17	18	17
Eggs	2.3	1.0	3.6	0.8	5.4	0.9	8.1	9.3	3.0	0.4	0.0	19.9	18	17	18	19.9	18	17	18	17
Milk and milk products	2.3	1.0	3.6	0.8	5.4	0.9	8.1	9.3	3.0	0.4	0.0	19.9	18	17	18	19.9	18	17	18	17
Animal fats other than butter	2.3	1.0	3.6	0.8	5.4	0.9	8.1	9.3	3.0	0.4	0.0	19.9	18	17	18	19.9	18	17	18	17
Vegetable oils and fats	2.0	1.3	2.7	7.8	9.4	3.5	6.1	9.6	7.9	2.1	0.0	4.2	2	5	2	4.2	2	5	2	5
Sugar	0.5	0.1	0.8	0.7	9.4	3.5	0.1	2.0	0.6	0.6	0.0	13.8	15	8	0.0	13.8	15	8	15	8
Other foodstuffs	0.0	0.0	0.0	4.2	9.4	3.5	1.0	2.4	1.2	1.2	0.0	0.3	1	2	0.0	0.3	1	2	2	2

(1) (12) For sources see notes to Table I with corresponding numbers. — (13) Including poultry. — (14) Oleomargarine and vegetable oils. — (15) Including animal fats. — (16) Included under meat. — (17) Vegetable oils and vegetable portion of margarine.

TABLE III. — *Annual Consumption of principal Foodstuffs in Chinese and Western Diets* ⁽¹⁾.
(Kilogrammes per consumption unit)

	Northern China (country of Yenshan, province of Chihli) 1922	Central China (county of Kiangsu) 1924	Peiping	Peiping 1926	Teachers ⁽²⁾	Peiping 1926-27	Handicraft workers ⁽³⁾	Nanking 1934	Changsha 1924	Day labourers ⁽⁴⁾	United States 1927-31	Whole population ⁽⁵⁾	Great Britain 1934-35	Whole population ⁽⁶⁾	United States 1936	United States 1933	United States 1929	Factory workers ⁽⁷⁾	Germany 1927	Agricultural workers ⁽⁸⁾	Germany 1927-28	Town labourers ⁽⁹⁾
Cereals and cereal products . . .	220.0	199.9	223.6	224.8	244.8	245.0	223.3	283.9	123.9	113.1	130.0	124.2	137.8	194.9	134.0							
Legumes and legume products . . .	36.6	5.2	37.6	29.0	24.7	28.3	86.6	151.4	90.8	182.1	272.6	243.8	153.6	318.9	193.5							
Roots and tubers . . .	35.6	12.7	3.7	159.2	9.1	0.5	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
Other vegetables . . .	33.7	33.0	40.0	9.1	13.2	2.3	46.3	0.0	85.8 ²¹	78.5	54.9	84.2	53.1	47.5	46.3							
Fruit . . .	2.7	4.9 ¹⁶	137.4	9.1	0.0	0.0	0.0	0.0	0.0	16.4	10.2	7.6	33.1	16.8	14.0							
Meat . . .	0.4	8.9	19.8	0.9	0.3	0.3	3.8	0.0	0.0	17257.6 ²²	120.7	151.4	281.2	169.1	200.7 ²⁸	154.8						
Fish . . .	0.0	3.8	6.2	0.1	0.1	0.0	2.5	0.0	2.3	5.4	6.5	2.0	2.2	2.0	4.8							
Eggs . . .	0.7	2.2	0.0	0.0	0.0	0.0	0.0	0.0	9.4	13.8	9.8	14.8	9.2	5.4	5.9							
Milk . . .	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2 ¹⁸	9.3	5.0 ²¹	7.9	9.1	7.2	2.7	4.5						
Cheese . . .	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.5 ²³	4.2 ²⁴	9.8 ²⁵	0.9 ²⁶	4.2 ²³	7.1 ²⁹	11.8						
Butter . . .	0.0	0.0	9.4	1.7	0.2	1.8	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
Other animal fats . . .	0.0	4.0	0.8	1.0	0.4	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
Vegetable oils and fats . . .	0.0	0.0	1.9	1.0	0.4	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						
Sugar . . .	0.0	0.8	1.9	1.0	0.4	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						

⁽¹⁾ Original data, when referring to a shorter period than a year, have here been converted to an annual basis. — In all cases where the quantities of milk and eggs are originally given in litres and numbers respectively, they have in the table been converted into kg. by multiplying the milk quantities by the factor 1.031 and eggs by dividing the number of eggs by the factor 17.5. — ⁽²⁾ Berlin 1930. — ⁽³⁾ Berlin 1930. — ⁽⁴⁾ Berlin 1930. — ⁽⁵⁾ Berlin 1930. — ⁽⁶⁾ Berlin 1930. — ⁽⁷⁾ Berlin 1930. — ⁽⁸⁾ Berlin 1930. — ⁽⁹⁾ Berlin 1930. — ⁽¹⁰⁾ Berlin 1930. — ⁽¹¹⁾ Berlin 1930. — ⁽¹²⁾ Berlin 1930. — ⁽¹³⁾ Berlin 1930. — ⁽¹⁴⁾ Berlin 1930. — ⁽¹⁵⁾ Berlin 1930. — ⁽¹⁶⁾ Berlin 1930. — ⁽¹⁷⁾ Berlin 1930. — ⁽¹⁸⁾ Berlin 1930. — ⁽¹⁹⁾ Berlin 1930. — ⁽²⁰⁾ Berlin 1930. — ⁽²¹⁾ Berlin 1930. — ⁽²²⁾ Berlin 1930. — ⁽²³⁾ Berlin 1930. — ⁽²⁴⁾ Berlin 1930. — ⁽²⁵⁾ Berlin 1930. — ⁽²⁶⁾ Berlin 1930. — ⁽²⁷⁾ Berlin 1930. — ⁽²⁸⁾ Berlin 1930. — ⁽²⁹⁾ Berlin 1930. — ⁽³⁰⁾ Berlin 1930. — ⁽³¹⁾ Berlin 1930. — ⁽³²⁾ Berlin 1930. — 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however, interesting to note that the use of wheat seems to have increased in Southern China after the World War, a fact ascribed partly to an increased internal migration of North Chinese into South China with its higher standard of life, partly to the important role played by this cereal in the army ration which naturally has also not been without its influence on the consumption habits of the people in Southern China. Wheat is a more convenient army ration than rice, for rice has to be cooked for each meal and cannot so easily be carried about, whilst bread, especially the Chinese steamed bread, can conveniently be put into a pocket or into the haversack and be ready for immediate consumption for several days, properties which naturally represent a great advantage especially for an army on the march ⁽¹⁾.

Unpolished or slightly polished rice, *i. e.* the rice not at all or only partially freed from bran, and whole meal products of other cereals are, as may be expected, mostly eaten among the poorer town populations and in the farming community, but the consumption of bran-free products is everywhere increasing to the great detriment of the health of the population. That the use of more or less refined cereal products is already widespread also in rural districts may be seen from the earlier budget investigation carried out in 1922-25 by Buck among farm families in Northern and Central China, from which it was estimated that, for instance, 20 per cent. of the wheat and 30 per cent. of the rice was on an average eliminated as food waste and used for animal feed ⁽²⁾.

Rice is mostly consumed steamed, whilst wheat and the other cereals mentioned above are either cooked and eaten as gruel or made into noodles, dumplings—pieces of unleavened dough boiled in water—or bread. The bread dough, usually leavened with sour dough, is not baked in an oven but steamed, a process which can be carried out with much less fuel than oven baking—an important point in fuelless China—and which gives, when the bread is fresh, a soggy close textured product with a leathery pallid “crust”. Oven-baked bread can be had in the great towns, but the absence of ovens in the homes, and above all the widespread shortage of fuel, makes this bread an unknown product for the majority of the Chinese population ⁽³⁾.

Legumes occupy an important place in Chinese, as in all Far Eastern diets. Whereas in western countries this kind of food generally contributes only 1-2 per cent. of the total intake of calories, the proportion in the Chinese diets is many times greater and amounts in the North China farmers' budgets to about 10 per cent. of the total energy supplied to the body. The legume most generally consumed—boiled or baked, in the shape of bean milk, cakes, pastes, sauces etc.—seems to be the soya bean. For instance, in the budget investigation carried out among farming families in 1929-33 by Buck, soya beans made up

(1) Japan as a Producer and Importer of Wheat. *Wheat studies of the Food Research Institute*, vol. VI, No. 8, 1930, p. 352.

(2) BUCK, J. L.: *Chinese Farm Economy*. Chicago, 1930, p. 362.

(3) Japan as a Producer and Importer of Wheat, *Wheat Studies*, *op. cit.*, p. 364.

more than half of the total legumes consumed, and they were used in the diet in nearly nine-tenths of all the localities investigated ⁽¹⁾.

The consumption of *roots, tubers, and green leafy vegetables* is, generally speaking, less important in China than is often imagined, as compared with the consumption in many western countries. Thus Table II shows that whereas in Great Britain and Germany, these foodstuffs constitute, on an average, about 10-15 per cent. respectively of the total energy intake of the whole population—proportions commonly met with also in recent western urban workers' budgets—the corresponding figures in all the Chinese budgets included in this table were much lower, attaining at most about 6 per cent., as among North China farmers. From a quantitative point of view only the family budget investigations among Peiping teachers and Nanking middle-class families showed consumption figures for roots, tubers and other vegetables comparable with those in some western budgets (see Table III) amounting per consumption unit per year to about 160 and 150 kilogrammes respectively; but in all the other Chinese budgets presented in Table III, the amounts were much less than even those consumed in the town workers' families in the United States and Germany.

The low consumption of vegetables, even among farm families, finds at least a partial explanation in the fact that their cultivation is looked upon as a specialised occupation of gardeners in the neighbourhood of towns, and that the Chinese farmers often are unaware how to grow even many of the common vegetables ⁽²⁾. Buck's investigation concerning the origin of food calories consumed, whether supplied by the farm, purchased, or received by the household as gifts, collected as wild plants, etc. showed that not even half of the energy supplied by vegetables other than potatoes, in North China farm families was produced on the farms, while 48 and 4 per cent. respectively were purchased or received from other sources ⁽³⁾.

Among the vegetables mostly consumed in China may be mentioned sweet potatoes, cabbages, turnips, taro, Irish potatoes, eggplants, radishes, carrots, cucumbers, leaves of potato and rape plants, alfalfa, spinach, mustard leaves, green amaranth, colza, leeks, onions, garlic, celery, etc.

In China the vegetables are very seldom consumed raw. They are, as a rule cooked in water or quickly boiled or baked in hot oil, but they are also largely preserved, salted or pickled in vinegar, mustard, etc.

Fruit is a luxury for the great mass of the Chinese population both in the north and in the south to an even greater extent than for the poorer sections of the population in western countries. It will be seen that in nearly all budgets included in Table II only a fraction of one per cent. of the whole energy intake was drawn from this foodstuff, whereas in Germany, Great Britain, and the United States the corresponding percentage for the whole population was estima-

⁽¹⁾ BUCK, J. L.: *Land Utilization in China*, p. 417.

⁽²⁾ *Ibidem*, p. 402.

⁽³⁾ *Ibidem*, p. 401.

ted at about 3 per cent., a proportion often met with also in western workers' budgets. It will be observed, as regards the quantities of fruit consumed that the relatively large amounts eaten by the middle-class families in Peiping refer principally to various kinds of melons, and that this budget investigation was carried out during a short period only of the summer half of the year. The figure can thus not be said to be representative for the annual average consumption of fruit among the families in question.

Compared with the west the consumption of *meat* in China is insignificant, being a food too expensive for the great majority of the population. Whereas, for instance, in the western countries mentioned in the tables, we find a meat consumption varying from about 46 kilogrammes per consumption unit per year among German town workers, to about 84 kilogrammes among United States farmers' families, we find among Chinese labourers and farmers' families an annual meat consumption intake per consumption unit varying from nil in the Changsha day labourers' budgets, to 0.4 kilogrammes in the farmers' budgets in North China, to 2.3 kilogrammes in Peiping handicraft workers' budgets and to 9 kilogrammes in the farmers' budgets in Central China. Only in the Nanking middle-class families which, judging from their incomes, mostly belonged to very well-to-do strata of society, did consumption reach a western level, 46 kilogrammes. A very small percentage only of the total calory intake is furnished by meat in farmers' and labourers' families, in North China only a fraction of one per cent. As regards the meat consumption of the Chinese farming population Buck's investigations show that only a little more than one third of the already insignificant total consumption of this and other animal foodstuffs among farm households is furnished by the farm itself. The farmers are, as a rule, in such a pressing need for cash that they are forced to sell nearly all the animal products produced on the farm and then, on grand occasions, to buy some meat in the market ⁽¹⁾.

The meat mostly eaten in China is pork. According to the family budget investigation carried out among Chinese farm families in 1929-33 by Buck, this kind of meat supplied in North China 70 and in South China 90 per cent. of the total energy furnished by meat ⁽²⁾. Mutton is of a certain importance in North China, rather, however, to flavour soup and vegetable dishes than as a separate meat dish in itself; in South China, on the other hand, it plays hardly any part whatever. Beef consumption is of some importance only among the Mahomedan Chinese, and, in recent years, in the great cities. Chicken and duck, which are often thought of as the chief meats used in China, enter into the diet of the great mass of the population only in minute quantities.

The Chinese make a much more complete use of their meat food than do western peoples, such parts as the intestines, bones, pigs' trotters being con-

⁽¹⁾ BUCK, J. L.: *Land Utilization in China*, p. 401. — Doubtlessly, however, this custom of the Chinese farmers of Buddhist faith can be at least partly attributed to the fact that the majority of Buddhists, though not allowed to kill, may nevertheless eat meat of animals killed by other persons.

⁽²⁾ *Ibidem*, p. 143.

sumed to a great extent. A favourite dish is "sweet-sour spareribs" made from split-up rib bones cooked in sweetened vinegar, whilst pigs' trotters cooked and preserved in vinegar are said to be an eagerly awaited gift for expectant mothers, who hope to have collected at least twelve pairs ready before the baby arrives, when they are eaten by the mother four or five times a day ⁽¹⁾.

In many parts of the Far East *fish* and other sea foods represent a much more important source of animal protein for purposes of human nutrition than does meat. This statement is no doubt true also for the coastal regions of China and along the rivers, but for the great mass of the population fish is of even less importance than meat. From Table IV it will be seen that in all Chinese budgets here included, the quantity of fish consumed is less than that of meat, and that the highest fish consumption figures arrived at did not amount to more than 3.7 kilogrammes annually per consumption unit. The percentage of the total calories furnished by fish is therefore quite insignificant. However, not only in China, but also in many western countries fish consumption is of relatively small importance. It will be observed, for instance, that the total intake of this food-stuff in the budgets of German agricultural workers does not amount to more than 4.5 kilogrammes, annually per consumption unit and in the United States farmers' budgets to only 2.2 kilogrammes.

In China fish and such other marine animal products as shrimps are very largely eaten salted or dried or in the form of various pastes and sauces used as appetizers along with the main dishes.

In China, as in all other Far Eastern countries, the *egg* consumption among the great mass of the population is very small. Certainly China is one of the world's most important egg-producing and egg-exporting countries, but it is too poor a country to allow the majority of its inhabitants the luxury of eating this relatively expensive animal foodstuff on other than special occasions. Only among the middle-class families in Peiping did the annual consumption approach a western level with 6.2 kilogrammes. per consumption unit.

Still today, as was the case 4,000 years ago, *milk* ceases for good, after the time of suckling—which, however, may last 2-3 years—to be a factor of any importance in the daily diet of the great majority of the Chinese population. In the diet of the farming community it is practically absent, and when it does figure as an item in the daily food, as in the case of Chinese middle-class families and teachers' families in Peiping, it does so in minimum quantities of not more than 0.4 and 0.1 kilogrammes respectively annually per consumption unit. Among the well-to-do Chinese population in the great cities there has, however, in recent years been an increasing consumption both of locally produced fresh milk—in Shanghai for instance, there existed in 1936 30 licensed dairies turning out daily over 13,300 quarts of milk—and of various kinds of preserved milk, mostly imported, but to some extent now also produced in several parts of China from

⁽¹⁾ Notes on Chinese diets. *Journal of Home Economics* (Baltimore), 1933, Dec., p. 871.

both cow's and buffalo's milk. In 1936 the total imports of ^{*}preserved milk amounted to about 4.7 million kilogrammes ⁽¹⁾.

What has been said of the small role of milk in the Chinese diet is still more true of *butter* and *cheese*, which products are completely absent in the food intake of the mass of the population. The *animal fat* mostly consumed is lard, but its role is insignificant as compared with that of *vegetable oils* and *fats*, such as soya bean oil, peanut-oil, linseed oil, sesame oil, mustard oil, etc. Even these vegetable fats will, however, be seen to be altogether missing in some of the budgets.

In China, as in Far Eastern countries in general, the role of *sugar* as a source of energy is much less important than in most western countries, and refined sugar is a luxury eaten only in trifling quantities on special occasions or offered to guests. In most of the Chinese dietaries included in the tables it will be seen that the annual consumption of sugar per consumption unit only amounts to about 1 kilogramme *i. e.* less than one per cent. of the total energy intake, a mere fraction of the quantities consumed in several western countries.

B. — Improvement of Chinese food consumption.

As regards the amount of food energy supplied to the Chinese people, the budget investigations carried out by Buck in 1929-33 showed that the average intake per adult male per day among the farming community, which comprises four fifths of the total population, amounted to about 3,200 and 3,400 calories in North and South China respectively; whilst even in most urban workers' budgets the calory intake compared well with the 2,800 calories intake proved adequate by practical experience for covering the energy needs of the average Chinese adult. Therefore, considering the small importance of net food imports relative to domestic production, there seems little doubt that in comparatively normal years (such as were 1929-33) China's own home production would be well able to provide the necessary food energy for its population, provided always that purchasing power and transport conditions allow a more even distribution of the available food resources.

However, these relatively normal years are only too often interrupted by disastrous and extensive floods, droughts and similar natural disasters. Furthermore, the population continues to expand steadily, except perhaps during conditions such as those now prevailing, so that Condliffe, for instance, considers it possible that the Chinese population is increasing at the rate of 37 millions per decade ⁽²⁾. Hence it is evident that there does nevertheless exist in China an urgent need of a larger food supply, not to speak of improved communications and other means for the better distribution of food resources.

⁽¹⁾ SCOTT, H. A.: Trade in Canned and Powdered Milk in China. *Commercial Intelligence Journal* (Ottawa), Vol. LVII, July 24, 1937, pp. 172-73.

⁽²⁾ CONDLIFFE, J. B.: *China To-day: Economic*. Students Edition. Boston 1932, p. 10.

China's agriculture, however, is not without possibilities of meeting these requirements. Admittedly little increase in the food supply is to be expected from the bringing into cultivation of arable land as yet uncultivated, which was long held to be the most promising way of increasing the food supply. According to Buck and several other present-day experts it is an "erroneous idea" that China has vast areas of potentially cultivable land. In the north-western provinces, Sinyuan, Ningsia, Kansu and Tsinghai, where these areas are supposedly to be found, most of the good land is already under cultivation⁽¹⁾. Anyhow it is estimated by Buck that by bringing under the plough the relatively small area of potentially arable land, by the removal of ancestral graves from the farm land, by the consolidation of scattered holdings thus reducing the use of land in boundaries, and by a more economic size unit of farms, thus lessening the area covered by farm buildings, probably another 10 per cent. of the actual farm land, or between 9 and 10 million hectares, could be rendered available for agricultural production in the whole of "Agricultural China"⁽²⁾.

In the opinion of most experts, however, it is not by bringing into use land as yet uncultivated, but by the still more intensive use of the already cultivated land that the amount of food supplied by Chinese agriculture could be most effectively increased. Though Chinese farming is very intensive in its use of labour and its achievements under the prevailing educational and economic conditions of the farmers are highly admirable, its success in terms of yield per unit of land is by far not as great as it could be made by the application of modern equipment and the results of modern agricultural science. Buck estimates that if these methods were applied it would be possible to increase agricultural production on the present farm land in "Agricultural China" by at least 25 per cent.

Many of these reforms aiming at extending and intensifying agricultural production—such as, for instance, measures for the prevention of floods and erosion, land reclamation by irrigation and drainage, consolidation of holdings etc.—could naturally not be carried out without large investments of capital. Some measures, on the other hand, could be realised with little or no increase in the cost of production. For example, the considerable losses in crop production caused by pests and insects, which reduce the crop production probably by as much as 10-20 per cent. could be prevented at small cost⁽³⁾. Similarly an increased production of starchy vegetables such as potatoes at the expense of cereals would not only mean a considerable increase in the amount of energy produced per unit of land without involving any extra economic burden, but would also provide more work on the overpopulated farms and a more even distribution of labour throughout the year⁽⁴⁾. However, all experts on Chinese conditions are agreed that so long as the Chinese population increases at the

(1) BUCK, J. L.: Land Utilization in China, p. 169.

(2) *Ibidem*, p. 202.

(3) *Ibidem*, p. 4.

(4) *Ibidem*, p. 242.

present high rate, any possible increase in agricultural output cannot in the long run suffice to cover the energy requirements of the Chinese people.

As regards the *protein* intake in Chinese diets, it will be remembered that this, from a purely quantitative point of view, corresponded well to the amount nowadays considered by most experts as adequate for adult maintenance. However, the protein supply, especially in the great cities, but to an ever-growing extent even among the farming population, is often made up of the proteins of low biological value contained in polished rice or bran- and germ-free flours of other cereals. Hence, there is little doubt that the amino-acid make-up of the protein consumed in large sections of the community is deficient and in urgent need of improvement.

To a certain limited extent such an improvement could no doubt be effected by an increased production and consumption of animal products, especially milk and eggs, with their protein of high biological value. Thus, for example, the egg production of China's probably over 300 million hens, now estimated at only about 50 eggs per hen annually, could probably be greatly raised ⁽¹⁾. Milch-goats could also with advantage be kept on more farms than is now the case, and similarly with regard to dual purpose cows for milk and labour, for at present the draft animals are at work only a small part of the year ⁽²⁾. Then again the keeping of dairy cattle could be economically developed in the neighbourhood of cities, where families belonging to the more well-to-do strata of the population can afford to buy milk and milk products. Similarly dairy farming should be extended in the frontier regions to the west and north of "Agricultural China", which indeed already send milk powder in skin sacks, and butter in cattle stomachs or in yak skins to be sold in the towns near the border of China proper and in the large lamaseries ⁽³⁾. When once the purchasing power of the people will allow them to substitute some other fuel for stalks and straw, and the grass and bushes now gathered from large areas of hilly land specially reserved for fuel purposes the resulting increase in the available amount of feed will no doubt also make possible a larger production of milk and meat. Finally it may be pointed out that growing industrialisation and the possible resulting rise in the standard of living will surely make it possible for the Chinese people to import larger quantities of expensive animal products.

It must, however, be stressed that for the great mass of China's immense population there exists neither at present nor in the near future any great possibility of raising the biological value of the protein intake by a greater consumption of animal foodstuffs. Most of the measures mentioned above, from which a greater consumption of such foodstuffs might be expected, would

⁽¹⁾ BUCK, J. L.: *Land Utilization in China*, p. 258. — CONDLIFFE, J. B., *op. cit.*, p. 60.

⁽²⁾ BUCK, J. L., *op. cit.*, p. 257.

⁽³⁾ According to data given in the China Statistical Yearbook, 1936-37 (Shanghai, 1936, p. 1310) the estimated amounts of butter and milk powder available in recent years for sale or barter in Inner Mongolia, Chinghai, Sikang, Sinkiang amounted to 6 and 57 million pounds respectively.

necessarily take a very long time, during which their results would largely be nullified by the simultaneous increase in the population.

As regards the possibilities of an increase in the milk production, it must be observed that it would hardly be possible, even with the measures mentioned above, to bring it up to a level where it could furnish the population of China with anything like the quantities now consumed and indeed considered indispensable in many western countries. For, except in the areas near the great cities, it is economically out of the question for the average Chinese farmer to keep dairy cows. Under intensive cultivation the area of good land required to support one dairy cow of average western milk production is usually estimated at about 0.8 hectare ⁽¹⁾, i. e. half the area of the average Chinese farm, so that milk is clearly a luxury product which China cannot afford to produce if it is to feed its population.

As regards an increased poultry and egg production, which is often regarded as the best means of improving the Chinese diet, and this not only from the protein point of view, it must not be forgotten that poultry requires a much higher quality of feed than do cows, and that egg-production is an especially costly process in terms of calories, one unit of land in "Agricultural China" producing nineteen times more energy when devoted to crops for direct consumption, than when devoted to egg production ⁽²⁾. It should also be realised that, assuming the estimates of the number of hens and their egg-laying capacity to be correct, even a doubling of that capacity to 100 eggs per hen annually, and supposing that all the eggs were consumed in the country, would only bring up the average consumption per head to little more than one egg per week.

If those nutritional experts are right who claim that for optimum health and physical and mental development there must be included in the diet animal protein up to one fourth, one third or one half of the total protein intake, with even larger proportions for growing children, pregnant women and nursing mothers, then clearly the prospects for the great mass of the Chinese people of ever attaining a good standard of health are indeed gloomy. It must, however, be pointed out that nutritional experts are by no means of one opinion in respect of the importance of animal protein in the human diet. There are also experts who maintain that the claims mentioned above are based on unjustifiable generalizations from the results of tests carried out on animals of quite a different rate of growth, reproduction and lactation from human beings, and therefore also of quite different protein requirements. These experts not only dispute the necessity of including animal protein in the human food in the quantities mentioned, but even deny that there exists any necessity of such protein in the human diet at all, asserting that the human needs of all essential amino-acids for all the various periods of life can be amply satisfied by protein of wholly vegetable ori-

⁽¹⁾ BUCK, J. L.: Land Utilization in China, p. 257.

⁽²⁾ *Ibidem*, p. 258.

gin⁽¹⁾. Where the staple food covering the energy expenditure is made up, for instance, of a cereal containing little protein of low biological value, it is not denied that it may be useful and, when cheaply available, even economically sound to add animal protein to the food in order to raise the biological value of all the protein to the requisite level. To attain this effect, however, the amount of animal protein to be added can be very small and it need not even be added at all, as the deficiencies in quantity and quality of protein from the staple food cereal can as well be made good by partially substituting for the cereal, for example, a legume, the different protein composition of which will provide the amino-acids to supplement the cereal protein⁽²⁾.

If this latter opinion is correct, the improvement of the Chinese protein intake where deficient is not a problem for the satisfactory solution of which it would be necessary to wait for an increased production of animal foodstuffs, increased industrialization or a rise in the purchasing power of the people. It could be solved to a very great extent as soon as the great masses of the Chinese population are taught to eat, instead of more or less refined cereal products, the cheaper whole meal products with their higher protein quality, and to increase, for instance, at the expense of certain cereals the production and consumption of soybeans and ground nuts, two foodstuffs extremely rich in protein of high biological value, the increased use of which would also be highly desirable from other points of view.

Our knowledge of human fat requirements is still very imperfect and, in fact, we cannot say whether the Chinese fat consumption, though very much inferior in quantity and different in composition from that prevailing in western countries, is always inadequate for the maintenance of perfect health. There exists, however, a considerable amount of evidence that human health is not injured even by a prolonged intake of a much smaller quantity of fat than that contained for instance in the Chinese farm families' diets, provided the shortage of fat is not responsible for a deficiency of the fat-associated vitamins A and D⁽³⁾. However, an increased fat content in many of the Chinese diets is probably desirable. Diets richer in fat give a sense of well-being not provided by those poor in this food constituent, they have a higher satiety-value than diets poor in fat and they make it possible to reduce the bulk of the food intake, fat furnishing

(1) See, for instance: HINDHEDE, M.: *Fuldkommen Sundhed of Vejen dertil*. Copenhagen, 1934, pp. 55-65, 65-81, etc. — BIRCHER-BENNER, M.: *Vom Wesen und von der Organisation der Nahrungsenergie*. Stuttgart-Leipzig, 1936, pp. 34 ff. — BERG, R. and VOGEL, N.: *Die Grundlagen einer richtigen Ernährung*. Dresden, 1930, 7th ed., p. 185 ff. — SCHEUNERT, A.: *Die Bedeutung der pflanzlichen Eiweissstoffe für die tierische und menschliche Ernährung. Fortschritte der landwirtschaftlich-chemischen Forschung* 1936. Vorträge und Berichte etc. Berlin, 1937, pp. 15-26. — TERROINE, E. F.: *La part protéique dans l'alimentation humaine. Bulletin de l'organisation d'hygiène, Société des Nations*. (Geneva). Vol. V, No. 3, pp. 472-540, 1936.

(2) TERROINE, E. F., *op. cit.*, pp. 538-39.

(3) DRUMMOND, J. C.: *Lanc Medical Lectures: Biochemical Studies of Nutritional Problems*. London, 1934, p. 48.

more than twice as much energy per unit of weight as do either proteins or carbohydrates. A certain bulkiness and amount of roughage—much more than rally prevalent in refined western diets—is no doubt necessary for the proper functioning of the stomach, but it may well be, as suggested by several nutritional experts, that, especially for children, the bulkiness of the Chinese diet often overtaxes the capacity of the digestive apparatus so that it could well be somewhat reduced.

No doubt the fat intake in Chinese diets could be comparatively easily raised by an extended production of oil-producing plants, especially soybeans and ground-nuts. Probably indeed it could not be raised by these means to the level frequent in western diets or recommended by many nutritional experts for western countries, which, however, for the tropical and sub-tropical parts of China would not even be physiologically sound; but it surely could be raised to the minimum standards advocated by various experts for warmer climates, *e. g.* about 50 grammes per day per consumption unit.

Whereas the production and consumption of vegetable fats could no doubt be comparatively easily increased, it would, however, be out of the question considerably to raise the intake of animal fats, and this for the same reasons as have been mentioned in connection with the protein problem. This fact need not, however, have any detrimental effect on the health of the Chinese people. The deficiency in vitamin A of most vegetable fats consumed in China can easily be remedied by an increased consumption of soybean oil, usually classified as a good source of vitamin A, and especially of green and yellow vegetables, foods very rich in this essential constituent. Any recourse to milk fats—the preeminent source of this vitamin in western countries—or other animal fats would not be necessary ⁽¹⁾.

Compared with the standard allowances for the intake of *calcium*, *phosphorus* and *iron* set up by western nutritional experts, it will be remembered that the intake in Chinese diets may, on the whole, be regarded as fully adequate in regard to phosphorus and iron, but as seriously deficient in regard to calcium. To remedy calcium deficiency most western experts recommend an increased production and consumption of milk, often advocating, mainly for that purpose, a consumption of one litre per head per day not only for children but sometimes even for adults ⁽²⁾. However, from what has been said before it would appear useless to expect to correct the deficiency of calcium in the great majority of

(1) As regards the deficiency of vitamin A in most vegetable fats, it may be worth while to point out here that there exists at least one vegetable oil extremely rich in this vitamin or, more correctly expressed, in carotene, the precursor of vitamin A, namely the red palm oil, procured from the fruit of the West African palm *Elavis guineensis*, which is now already grown in Malaya and Burma and which no doubt could also be cultivated in South-Eastern China. The oil, which can be incorporated in the diet in various ways, has proved itself as effective as cod liver oil in the treatment of eye diseases caused by vitamin A deficiency and is many times cheaper (The Conference of Medical Workers in India. *Current Science*, Feb. 1938, pp. 408-10).

(2) However, it must be pointed out that the value and necessity of such a large milk consumption is challenged by several other famous nutritionists, such as Hindhede of Denmark, who in various publications has strongly criticised the arguments advanced in favour of so large a milk consumption.

Chinese diets by an increased production of milk. Nor can any substantial and general rise be expected in any near future from the increased consumption of imported cheap milk products, such as, for example, skim milk powder, which is still too expensive a foodstuff for the great majority of the population to be consumed in any noteworthy quantities. For the solution of the Chinese calcium problem, however, any recourse to milk, fresh or preserved, is not necessary. The calcium content in the diet can equally well and, above all, more cheaply be raised to an adequate level by an increased consumption of green leafy vegetables, of certain roots, such as carrots and turnips, and of soybean milk and soybean curd, all of which are good sources of calcium. More cheaply still the same result could be attained by simply including in the diet a common calcium salt such as calcium carbonate, for calcium in this form can very well be utilized by the human body and could be made available at a price much below that of common salt ⁽¹⁾.

As regards soybean milk, this product seems to constitute a good and cheap substitute for cow's milk, and nutritional experts in China, the United States and the Dutch East Indies report good results from its use in the feeding of infants and children. Nowadays it is manufactured in China also in the form of a dried milk powder, which can also be used for cooking and baking purposes, which stands any amount of transport and storage without refrigeration, and which can always be freshly prepared.

As far as Chinese diets are deficient in one or other *vitamin*, this deficiency can no doubt be remedied to a very great extent already under the present agricultural and economic conditions, without recourse to the more expensive animal foodstuffs. An inadequate vitamin A intake can easily be raised to an adequate level by increasing the production and consumption of green or yellow vegetables and roots, most of which foodstuffs are good or even excellent sources of this vitamin; whilst, as already pointed out, avitaminoses, caused by lack of this vitamin, could be efficiently and cheaply cured by the administration of red palm oil, which no doubt could be produced also in South-West China within the limit of palms.

Admittedly, disinterested nutritional educational campaigns against the use as food of highly milled cereals and, if necessary, legislation restricting the manufacture or import of such products would naturally meet with keen resistance from powerful vested interests. On the other hand such measures, if successfully carried out, would not only wipe out beri-beri and other evils resulting from the lack of vitamin B₁ in food, but would also, without any increased expenditure to the consumer, enrich his food with other vitamins, minerals and protein of high biological value. Considering that man is able to digest bran just as well as the pig and nearly as well as the cow, and that, by the conversion of vegetable into animal foodstuffs only five to twenty per cent. at most of the energy

(1) BUCK, J. L.: Land Utilization in China, p. 434.

(2) MILLER, H. W. and WEN, C. J.: Experimental Nutrition Studies of Soymilk in Human Nutrition. *The Chinese Medical Journal* (Shanghai), 1936, vol. 50, pp. 454, 457-458.

value is recovered in the form of meat, milk and eggs, the inclusion of the bran in the human food would further mean a considerable increase in the total amount of energy available for the nutrition of the Chinese people. This high capacity of the human digestive apparatus to utilize the energy content in the bran was demonstrated already many years ago by experiments undertaken by Hindhede⁽¹⁾, and later verified by several other physiologists; but of this fact, curiously enough, even many nutritional experts still seem unaware, so that they do not realise the immense waste of energy and of extremely valuable food-constituents involved in separating the bran and the germ from the cereals intended for human consumption.

Deficiency in vitamin C can be corrected in the same way as the deficiency in vitamin A, *i. e.* by increasing the production and consumption of green leafy vegetables, tubers and roots, most of which are good or excellent sources of this dietary essential. The propagation of cheap and convenient methods for the disinfection of fresh vegetables would naturally also contribute greatly to remedy any vitamin C deficiency of the diet, making it possible to eat more of these foodstuffs in their natural state, which at present is very little done owing to the peril of infection from the night soil everywhere used in China as a fertilizer.

In order to increase the vitamin D content in the food, which no doubt is highly needed where little sunlight is available, and perhaps also desirable where sunshine is abundant, it is naturally impossible under present economic conditions in China or in any near future to expect much improvement from an increased consumption of animal foodstuffs rich in this vitamin, such as eggs or milk. To remedy the vitamin D deficiency in the food, recourse must mainly be had, as in the case of vitamins A and C, to vegetable foodstuffs, such as mustard, cabbage, rape etc., which generally are classified as good sources of vitamin D. Though opinions differ, a supply of D vitamins of animal origin does not seem to be essential for the prevention of deficiency diseases caused by lack of this vitamin in the food. We may here refer to what has already been said about the occurrence of rickets and osteomalacia in China, and may also quote the testimony of Professor William Adolph, one of the best known experts on Chinese nutritional conditions, on the prevalence of the latter disease among the Chinese. Osteomalacia, he says, was never seen by him "in a person, the food of whom consisted of whole meal products or unpolished rice plus vegetables in a total amount sufficient to supply about 13,000 calories" ⁽²⁾.

In our survey of the measures for the improvement of Chinese food consumption, we have thus found that there probably exist but small possibilities in the near future of bringing about any marked rise in the consumption of animal food-stuffs in China, and that the most hopeful way of improving the quality of the diet and increasing the available food energy, lies in an in-

(1) HINDHEDE, M.: *Fuldkommen Sundhed og Vejen dertil*. Copenhagen, 1934, pp. 88-100.

(2) Quoted from the Danish (HINDHEDE, M.: *Kostundersøgelser i Danmark 1931 og U. S. A. 1935 m. m. Ugeskrift for Læger* (Copenhagen), 1937, No. 27, p. 758.

creased production and consumption of vegetable foodstuffs. Presuming the standpoint to be correct which declares animal protein not to be a necessary ingredient in human food for the achievement of optimum health, we have also found that, in such case, it would be possible with a diet composed of whole cereal products, legumes and abundant green leafy vegetables, roots and tubers, amply to cover all the necessary requirements of the human body, as regards energy and all essential food constituents.

It cannot be denied that the Chinese people furnish many proofs in corroboration of such an opinion. Pressure of space, however, prevents us from entering into a more detailed consideration of this issue which is so far-reaching in its importance for the whole human race, and we must confine ourselves to giving some brief details from a recent investigation of poor people's diet in Peiping, when it is at its best, and the state of health of those who follow it ⁽¹⁾.

From the table on the next page, taken from the investigation mentioned, it will be seen that the diet is a wholly vegetarian one. Meat in small quantities is eaten no more than three or four times a year at festival times. The only ingredient that varies with the seasons is the vegetable, in other respects the diet being monotonously the same. The cereals are usually eaten as steamed bread, whilst vegetables are cooked for a short time in water to which is added a little oil.

Though, as presented in the table, the diet contains only about 2,100 calories, it furnishes nevertheless about 90 grammes protein of high biological value, about 50 grammes of fat, as well as calcium and phosphorus in sufficient and well balanced quantities of 1.1 and 1.7 grammes respectively and vitamins A, B₁ and C in amounts very much above adult requirements, thus providing for a sufficient intake also after cooking.

The diet is characterized by the investigators as excellent in every respect, not only on account of its composition but 'by the ultimate test, the health, vigour and reproductive performance' of the people who follow it. Nursing mothers living on this diet, which is so completely lacking in milk and other animal foodstuffs considered absolutely necessary in the west especially for this period of life, are described as good-sized and vigorous, with well-spread well-formed and well-enamelled teeth, normal eyes and skin, with milk for 18-24 months and with vigorous and numerous children.

A further important point is that the diet is described as an excellent one for the period of weaning "for as soon as the teeth begin to erupt, bits of raw turnip are given to be nibbled and whole cereal bread is given, at first softened by soaking in vegetable soup and later, as the child is able to handle it and chew it, dry. This demands good use of the jaws during the development

⁽¹⁾ GUY, R. A. and YEH, K. S.: Peking diets. *The Chinese Medical Journal* (Shanghai), vol. 54, Sept. 1938, No. 3, pp. 201-22. — Owing to extreme poverty, ignorance, fashions and fads, this diet, it will be observed, is often impaired; fresh vegetables being omitted among the poorest, and milled cereal products, because of prestige, taste, etc. being substituted for yellow maize and soybean flour.

TABLE IV. — *Diet at its best of Poor People in Peiping* (1).

Foodstuffs	Weight — gr.	Protein — gr.	Fat — gr.	Carbohydr- ates — gr.	Calories	Calcium — gr.	Phosphor- ous — gr.	Vitamin A — Internation- al units	Vitamin B ₁ — Cowgill units	Vitamin C — gr. ascorbic acid	Cost (1937) — Coppers (2)
Mixed maize and soya flour (9 parts maize, 1 part soya)	250	29	15	175	950	0.112	0.792	1,600	5,000	0	14
Mixed millet and soya flour (6 parts millet, 4 parts soya)	250	54	22	142	982	0.285	0.785	100	5,900	0	17
Vegetables (such as small cabbage)	500	5	0	10	60	0.700	0.150	30,000	550	0.200	6
Sesame oil	10	0	10	0	90	0	0	0	0	0	2
Salt turnip	20	0	0	4	16	0.024	0.012	0	0	0	1
Total	1030	88	47	331	2098	1.121	1.739	31,700	11,450	0.200	40
Requirements of an adult person weigh- ing 50-60 kg.		60-80			2000			4,000	5,000	0.050	

(1) Such snacks as baked or steamed sweet potatoes and peanuts taken between meals are not included in the table. — (2) 500 coppers = 1 Chinese dollar (1937).

of the teeth and does not require the time-consuming spoon-feeding. Tastes of the soup are usually given at an early age and increased according to the desires of the child".

Finally a not unimportant merit of this diet is that it is cheap and well within reach of the actual purchasing power of many of the poor in Peiping and elsewhere, which cannot always be said of the diets proposed by nutritional experts for the improvement of Chinese food-consumption habits. However, during recent years statistics of wages and earnings among the working population in Peiping and other Chinese cities and also retail price statistics for Chinese cities other than Peiping have unfortunately all been difficult to obtain. We must therefore for the time being abstain from going further into this important aspect of the question before us, and can only call the attention of the interested readers to the figures in the last column of Table IV indicating the cost of the diet. It will be seen that a diet composed as that in the table, and furnishing about 2,100 calories, would have been purchasable in Peiping in 1937 for 40 coppers. Assuming as before the requirements of a Chinese adult male to be about 2,800 calories a day, a diet of the same proportional composition but with the amount of energy raised to the last mentioned figure, would thus have been available for about 53 coppers, *i. e.* a little more than a tenth of a Chinese dollar.

H. LINDSTEDT.

THE INTERNATIONAL RUBBER AGREEMENT, 1938 ⁽¹⁾

The 1934 agreement between the Governments of France, Great Britain, India, the Netherlands and Siam relating to the production and export of rubber in the territories therein designated ⁽²⁾, requested the International Rubber Regulation Committee to prepare, at the latest 9 months and at the earliest 12 months before the expiration of the agreement on December 31, 1938, recommendations regarding the continuation or otherwise of the agreement and any amendments which the Committee considered desirable. These recommendations were to be placed before the contracting governments, who were to signify their acceptance or otherwise of the agreement within a period of three months. If the recommendations were not accepted by all the contracting governments a conference might be convened at the suggestion of some of them. The aim of such

⁽¹⁾ See F. ARCOLEO, International Organization of the Rubber Market. *International Review of Agriculture*, November 1936.

⁽²⁾ French Indo-China, Burma, Ceylon, Federated and Unfederated Malay States, Straits Settlements, North Borneo, Brunei and Sarawak, British India, Netherlands Indies, Siam.

a conference would be to review the position and to decide on possible future agreements ⁽¹⁾.

In accordance with these provisions the International Rubber Regulation Committee decided on March 29, 1938 to recommend to the contracting governments the extension of the agreement until December 31, 1943, but with several amendments which were adopted, the most important of which we shall mention below ⁽²⁾.

Before examining the new agreement of 1938, we shall give some indication of the position of the rubber market at this period.

Standard ribbed smoked sheet rubber was sensibly affected by the business recovery in 1936-37, and in March 1937 the London price reached 11^{29/32}d. per pound—so far the highest price touched since 1929. The increase in demand led the Committee to raise the export percentage from 75 per cent. for the first quarter of 1937 to 80 per cent. in the second quarter and 90 per cent. in the remaining two quarters.

The fall in prices, however, which had begun with the recession in the United States in the spring of 1937, became more acute in September as the depression spread to all branches of production; and the price of rubber, which had been 9^{11/16}d. in June fell to 7^{13/16}d. in September. Demand fell off and the International Committee was constrained to reduce the export percentage further, to 70 per cent. in the first quarter of 1938, 60 per cent. in the second, and 45 per cent. in the third and fourth quarters of 1938 ⁽³⁾.

The principal factor to affect the rubber market unfavourably was the falling off in United States demand, which takes a large part of the world output of rubber. While in the first quarter of 1937 this country consumed monthly 50,000 long tons ⁽⁴⁾, in July, August and September the figure had fallen to 42,000—43,000 long tons, in October to 38,707, in November to 33,984 and in December to 29,160 long tons. This fall has been attributed largely to a slackening in the motor and tyre industry during 1937 due to the general recession.

The increasing employment of reclaimed rubber has had a similar effect. Thus while the consumption of reclaimed rubber was 77,500 long tons in 1932,

⁽¹⁾ Agreement between the Governments of France, the United Kingdom, India, the Netherlands and Siam to regulate the production and importation of rubber. London, Treaty Series No. 12, 1934, p. 4.

⁽²⁾ Declaration by His Majesty's Secretary of State for Foreign Affairs recording the regulation of the production and export of rubber. London, Treaty Series No. 74, 1938, p. 5.

⁽³⁾ *Statistical Bulletin* of the International Rubber Regulation Committee, April 1939, London, pp. 1 and 22.

⁽⁴⁾ We would draw the reader's attention to the fact that the agreement itself is expressed in terms of long tons, as also consequently is our description of it. Of the tables at the end of the article, however, three are expressed in terms of metric tons and only one in long tons.

1 long ton = 1.016047 metric ton;

it rose steadily, reaching 100,000 long tons in 1934, 141,500 in 1936 and 162,000 in 1937 ⁽¹⁾.

A further factor acting in the same direction has been the rapid development in the use of synthetic rubber, particularly in Germany and the U. S. S. R. Nevertheless, while this factor may be important for the long-run position of the world market, its present effect has been slight in comparison with that produced by changes in demand in the United States ⁽²⁾.

The new agreement of 1938 has practically the same object as the preceding one—the taking of measures to regulate the production and export of rubber “with the object of maintaining world stocks at a normal figure, and adjusting in an orderly manner supply to demand, while always placing at the disposal of consumers all the rubber which they require, and maintaining a fair and equitable price level which will be reasonably remunerative to efficient producers”.

To interpret the expressions “normal figure” as regards stocks and “reasonably remunerative” as regards prices, it will be well to refer to a letter from the Secretary of the International Committee written when the recommendations of the International Committee were placed before the various governments concerned.

This letter states *inter alia*: “As regards the figures relating to normal stocks and the level of reasonably remunerative prices for the producers, yielding a normal return, the Committee has never expressed its attitude in public, and the press alone carries the responsibility for all statements on this subject”. The letter adds: “A certain stock figure of rubber may be favourable under certain conditions of trade, but the same figure might be inadequate under conditions where for example world demand had considerably altered. The same applies to the price criterion. Stocks and prices are only part of a general picture which the industry may present at a given moment” ⁽³⁾.

As regards the limitation of exports, the agreement established basic quotas for the different countries, as had been done in the 1934 agreement. A percentage of these quotas is fixed from time to time by the International Rubber Regulation Committee as the “permissible exportable amount” for each area. This percentage is in principle the same for each territory, except that the permissible exportable amount for Siam may not be less in any one of the control years 1939-1943 than 41,000 long tons.

The following table shows the quantities of dry rubber which have been adopted as basic quotas for each area and in each of the control years.

⁽¹⁾ *Statistical Bulletin* of the International Rubber Regulation Committee, April 1939, London, p. 15. — *Bulletin de Documentation coloniale*, Ministère des Colonies, Paris, April 15, 1938.

⁽²⁾ *World Agricultural Situation*, 1939, International Institute of Agriculture, Rome, p. 86.

⁽³⁾ E. BAILLARD, L'Accord International de Caoutchouc in *Les Produits Coloniaux et le Matériel, Colonial*, Institute Colonial de Marseille, June 1938, p. 62.

Basic Quotas, 1939-1943 (A).

(Long tons)

*Area	1939	1940	1941	1942	1943
Straits Settlements, Federated & Unfederated Malay States & Brunei	632,000	642,500	648,000	651,000	651,500
Netherlands India	631,500	640,000	645,500	650,000	651,000
Ceylon	106,000	107,500	109,000	109,500	110,000
India	17,500	17,750	17,750	17,750	17,750
Burma	13,500	13,750	13,750	13,750	13,750
State of North Borneo	21,000	21,000	21,000	21,000	21,000
Sarawak	43,000	43,750	44,000	44,000	44,000
Siam	54,500	55,300	55,700	56,000	60,000
Total	1,519,000	1,541,550	1,554,700	1,563,000	1,569,000

(*) Declaration by His Majesty's Secretary of State for Foreign Affairs recording the regulation of the production and export of rubber, London, Treaty Series No 74, 1938, p. 5.

The quantities fixed in 1934 for the years 1934-1938 had been altered while the agreement was still in force. Thus the basic quotas for Siam had been raised from 15,000 to 40,000 long tons for each of the years 1935-1938. Similarly the quotas conceded to British India had been raised from 8,250 to 12,500 long tons for 1935, from 9,000 to 12,000 long tons for 1936 and 1937 and from 9,250 to 13,000 long tons for 1938. Burma's quotas too had been increased from 6,750 to 8,000 long tons for 1935, and from 8,000 to 8,500 long tons for 1936, no changes being made for 1937 and 1938. Finally, the quotas allotted to Netherlands India had been raised from 443,000 to 500,000 long tons for 1936, from 467,000 to 520,000 for 1937, and from 485,000 to 540,000 for 1938 ⁽¹⁾.

Except for a few modifications relating to certain countries the other provisions regarding exports are similar to those of the 1934 agreement. Net exports of rubber in each territory must, as a general rule, be limited to the permissible exportable amount; but this quantity may be exceeded by not more than 5 per cent. in any year, on condition, however, that exports in the following year are reduced by an amount equal to the surplus in the first year. Similarly if during any year one of the areas has exported a quantity of

(1) Protocol signed by the Governments of France, the United Kingdom, India, the Netherlands and Siam amending the agreement of May 7, 1934 for the regulation of the production and export of rubber. London, Treaty Series No. 20 (1936).

rubber smaller than the permissible exportable amount it is allowed to exceed the permissible exportable amount in the following year by a quantity equal to the deficit in the first year—subject to the condition that this deficit does not exceed 10 per cent. of the permissible exportable amount. If the deficit does exceed 10 per cent. the additional allowance will be 10 per cent.

Special regulations deal with exports from Burma to India, and also with the control of exports from the group of countries composed of the Straits Settlements, the Federated and the Unfederated Malay States and Brunei. Exports of rubber from French Indo-China also receive special treatment. Limitation will only be applied to them during any of the years 1938 to 1943 if they exceed 60,000 metric tons. Surpluses above these figures will be submitted to the average percentage of reduction of the basic quotas applied during the same year in other countries. The quantities of rubber corresponding to this restriction must be supplied by Indo-China to the International Rubber Regulation Committee. The Committee may then use these quantities in the way which appears best adapted to achieve the purpose of the agreement.

Exports of rubber from territories to which the agreement applies and imports into these territories must be accompanied by a certificate of origin. No exports or imports may take place without such a certificate; and provision is made for heavy penalties and in particular for the destruction and confiscation of the rubber. This rule does not apply either to the islands of Singapore and Penang or to places of storage sanctioned by the International Committee.

Exports of rubber plants from any of the territories to which the agreement applies are forbidden under penalties that shall be effectively deterrent, except to any other territory or group of territories to which this agreement applies. Such exportation will, however, be permitted from any one of these territories to another, unless commercial or administrative considerations in the territory of origin render this undesirable.

The 1938 agreement contains provisions relating to stocks of rubber modifying those of the 1934 agreement. Every owner of a rubber estate of less than 1,000 acres in area is prohibited, under penalties that will be effectively deterrent, from having in his possession at any time stocks of rubber exceeding one-quarter of the amount of total standard production of that estate for the preceding control year. These regulations, however, do not apply to India, Burma, Singapore Penang, Siam, or to storage places sanctioned by the International Committee; but in India, Burma and Siam the stocks of rubber must be limited to normal proportions, having regard to the amount of rubber consumed internally.

The most important modifications of the 1934 agreement introduced under the 1938 agreement relate to new planting and replanting. By the original agreement new planting was in general prohibited under heavy penalties, including the destruction of plants at the expense of the owner. Only in Siam might new planting be carried out, and then only on an area not exceeding 31,000 acres; whilst in all countries new planting was allowed where intended for exclusively experimental purposes and not covering an area of more than 0.25 per cent. of all plantations in the country concerned.

The new agreement permits new planting between January 1, 1939 and December 31, 1940 to the extent of 5 per cent. of the area at present planted. These areas are as follows:

Straits Settlements, Federated Malay States, Unfederated Malay States and Brunei	3,273,100
Netherlands India	3,214,900
Ceylon	605,200
French Indo-China	314,200
India	128,000
Burma	104,400
State of North Borneo	126,600
Sarawak	228,000
Siam	312,000

The International Committee has the power to permit additional new planting during this period, on an area up to 1 per cent. of the total planted area of all territories to which the agreement applies. After December 31, 1940 new planting will be permitted on areas not greater than the percentages of the total planted areas in each territory, and these will be fixed from time to time by the International Committee. The Committee has the power to permit additional new plantings during the period between January 1, 1941 and December 31 1943, on an area up to a maximum of one-fifth of the area previously permitted. These regulations do not apply to Siam, where new plantings are permitted from January 1, 1938 to December 31, 1943 on a percentage of the total area planted equivalent to the highest percentage granted to any other territory, and in any case on an area of not less than 31,000 acres. New planting rights not used in the periods fixed will be automatically cancelled.

The term "new planting" in the text of the agreement means the planting of seeds or plants on any area not planted with rubber since May 7, 1934. If other crops are entirely or partially replaced by rubber plants on an area which is already growing two or more crops, such replacement is deemed new planting.

The 1934 agreement limited the owner's right of replanting to 10 per cent. per annum of the planted area owned by him, with a maximum of 20 per cent. for the whole period of the agreement (1934-1938). The new agreement allows replanting in principle, but provides that the International Committee shall review the position and if necessary limit replanting after December 31, 1940; "supplying" however, is permitted without any reservations. Replanting in the restricted and special sense used in the text refers to the planting of over 30 plants per acre (75 plants per hectare) on any area which had already been planted with rubber on May 7, 1934, in so far as this planting could not be considered as new planting.

The text of the agreement restricts the term "supplying" to the replanting of less than 30 rubber plants per acre (75 plants per hectare), in so far as such planting cannot be considered as new planting.

The International Committee, some of whose principal functions we have shown by this account of the most important clauses of the agreement, is composed of delegations representing the territories to which the agreement applies.

The 1938 agreement contains a new clause dealing with the possibility of suspension. Any contracting government may, if it considers that its national security is in danger and that the continuance of its obligations under this agreement would be inconsistent with the requirements of that security, give notice to the Government of the United Kingdom that it desires the suspension for the period of the emergency of all its rights and obligations under the agreement, with the exception of those relating to new planting and the exportation of plants.

The Government of the United Kingdom will inform the other signatory governments of this modification, and the latter will then have the right to inform the Government of the United Kingdom, within one month, that they also desire to suspend the application of the agreement. If such notification is given by two or more governments, the agreement will be suspended for all the signatories, except in regard to new planting and exportations of plants. In every other case the agreement remains in force between the contracting governments which have not given notice of suspension.

As to the possible extension of the agreement the procedure envisaged in the 1938 agreement differs in several points from that envisaged in the 1934 agreement. Twelve months at least before the expiration of the agreement, the International Committee will approach the contracting governments with a recommendation relating to the extension of the agreement with or without amendment. If the first recommendation is not accepted by all the contracting governments the Committee may put another before them. If this further proposal should not be accepted, the Government of the United Kingdom may on its own initiative, or at the request of one of the contracting governments, call a conference of the contracting governments to review the position.

While the agreement is in force, the International Committee may at any moment recommend the governments to modify part of the agreement where such revision has not been expressly forbidden, there being special provisions regulating the procedure for the acceptance and bringing into force of such modifications.

The application of the new agreement coincided with an improvement in the market situation. The London price of smoked ribbed sheet rubber during the first six months of 1938 showed a distinct downward tendency; after opening at $7\frac{3}{32}d.$ per pound in January it moved to $5\frac{27}{32}d.$ in April and $6\frac{7}{32}d.$ in June. In July it rose to $7\frac{1}{2}d.$, the year closing at $8\frac{7}{16}d.$; in 1939 it opened at $7\frac{31}{32}d.$ in January-February, rising to $8\frac{5}{32}d.$ in March.

The percentage of exports, which had been fixed at 70 per cent. for the first quarter of 1938, was reduced to 60 per cent. for the second and 45 per

Dry Rubber Output of the principal Producing Countries.

(Metric tons)

Country	1933	1934	1935	1936	1937	1938
Brazil (w)	10,605	12,104	16,288	17,581	18,462	18,000
Burma (p)	3,568	4,850	5,591	9,570	11,472	...
British Borneo (b) (p)	18,135	31,729	31,126	32,349	43,065	31,648
Ceylon (a) (p)	64,554	80,991	54,648	50,722	70,805	51,992
India (p) . . . . .	...	11,994	12,498	13,811	14,636	...
Netherlands India (b) (p) . .	287,779	378,722	299,774	313,120	457,620	(a) 302,896
Indo-China (a) (p)	18,687	20,453	29,278	41,314	45,137	57,910
British Malaya (p)	467,215	487,087	383,066	369,521	509,746	365,404
Siam (c) (p)	10,853	20,670	26,693	32,040	28,338	...

(a) Exports for the calendar year. — (b) Figures partly obtained from export figures for calendar year. — (c) Exports for fiscal year beginning on April 1 of the year indicated. — (w) Wild rubber. — (p) Plantation rubber.

Raw Rubber Exports of the principal Exporting Countries.

(Hundred metric tons)

Country	1933	1934	1935	1936	1937	1938
Belgium-Luxemburg	40.5	48.8	35.1	38.0	21.6	27.8
United Kingdom (r)	282.5	553.8	481.4	703.3	456.5	367.0
United States (c) (r)	208.7	—	—	—	—	—
Brazil	94.5	111.5	123.7	132.5	147.9	120.8
Burma (a)	—	—	—	—	63.2	92.8
British Borneo	202.7	309.0	305.2	314.6	421.7	292.0
Ceylon	645.5	809.9	546.5	507.2	708.0	519.9
Ceylon (r)	16.0	31.5	34.4	37.0	24.3	16.6
India (a) (e)	46.0	107.2	131.3	133.0	101.8	(g) 79.3
Netherlands India	3,401.4	3,855.0	3,144.7	3,421.0	4,458.2	3,112.4
Indochina	186.9	204.5	292.8	413.1	451.4	579.1
Japan (b) (r)	19.4	7.7	11.7	12.0	5.6	0.1
Japan (d)	45.4	66.2	62.4	40.7	42.8	4.5
British Malaya	5,826.1	6,880.8	5,997.9	5,284.9	6,925.8	5,431.0
Siam (f)	108.5	206.7	266.9	320.4	283.4	...

(a) For the changes effecting these countries see the Introduction to the *International Yearbook of Agricultural Statistics* 1938-39. — (b) Including guttapercha. — (c) Including foreign trade of non-contiguous territories. — (d) According to the statistics of Korea; trade with Corea. — (e) Sea-borne trade. — (f) Year commencing April 1. — (g) Including 280 metric tons of re-exports.

(r) Officially classified as re-exports; but note that not all countries classify re-exports separately.

cent. for the third quarter of 1938. At its meeting of December 12 the International Committee decided to retain this last percentage for the fourth quarter of 1938, and this, as we have seen, led to an improvement in prices which had indeed already shown a more favourable trend. In these circumstances, at its meeting on November 15, the International Committee decided to increase the percentage to 50 per cent. for the first quarter of 1939. This percentage has been retained for the second quarter.

Raw Rubber Imports of the principal Importing Countries.

(Hundred metric tons)

Countries	1933	1934	1935	1936	1937	1938
Germany (a)	582.2	636.6	651.4	734.1	999.6	919.2
Austria (a) (b)	31.7	38.0	40.4	38.7	42.0	80.7
Belgium-Luxemburg	156.0	141.6	112.3	135.8	173.6	142.9
Spain (b)	56.1	70.2	87.0	...	...	...
France (b)	710.3	575.6	585.7	636.1	677.4	652.4
Italy	197.1	217.7	204.8	168.0	253.6	293.9
Netherlands	40.8	42.7	49.3	35.6	47.8	53.2
Poland-Danzig (a) (b)	33.6	51.3	43.7	48.7	61.5	79.8
United Kingdom	1,028.5	2,148.1	1,769.4	627.7	1,381.2	1,709.8
Sweden (b)	41.7	75.1	49.4	46.6	68.0	84.4
Czechoslovakia (a) (b)	112.2	117.7	116.9	89.3	132.7	101.1
U. S. S. R. (territories in Europe and Asia)	311.7	480.3	381.8	314.6	309.5	...
Canada	196.3	288.9	273.0	283.1	367.4	261.2
United States (c)	4,256.2	4,700.4	4,740.1	4,959.8	5,047.5	4,185.9
Mexico	20.1	38.4	21.5	28.2	42.4	29.4
Argentina	36.7	50.2	55.4	57.3	97.0	77.8
China (a) (b) (d)	58.1	54.7	49.6	81.6	62.7	30.9
Corea (b)	45.4	66.2	62.4	40.7	42.8	4.5
Japan (e)	699.3	718.2	596.8	638.9	637.6	470.6
British Malaya	1,708.1	2,148.4	1,774.5	1,704.9	2,168.7	1,683.7
Union of South Africa	6.0	11.4	13.3	39.2	60.5	55.1
Australia	137.6	113.3	94.4	143.3	193.7	122.4

(a) For the changes affecting these countries see the Introduction to the *International Yearbook of Agricultural Statistics* 1938-1939. — (b) Including gutta-percha. — (c) Including foreign trade of non-contiguous territories. — (d) Trade from Manchukuo ports not included. — (e) Trade with Japan.

United States consumption which, as we have already seen, accounts for a large part of the world consumption of rubber, reached a minimum in February 1938 of 23,868 tons, and then rose with slight fluctuations to 45,315 in December 1938, so reflecting the general trend of business, which had recovered since the

summer of 1938. In 1939, it opened in January with 46,234 tons and after falling to 42,365 in February, rose to 50,165 in March ⁽¹⁾.

We give here four tables, of which the first three are compiled from the *International Yearbook of Agricultural Statistics* 1938-39, and give the rubber production, exports and imports (in metric tons) of all countries which respectively produced, exported and imported over 4,000 metric tons of rubber in at least one of the years 1933-1938; whilst the fourth table, coming from the *Statistical Bulletin* of the International Rubber Regulation Committee (April, 1939), compares net exports, absorption and stocks (in long tons).

Comparison of Rubber Exports, Absorption and Stocks.

(Long tons)

Year	Total net export of agreement countries (1)	Other countries: net exports (2)	World net exports (1) + (2)	World absorption of crude rubber	Crude rubber stocks outside regulated areas
1934	1,017,800	(a) 14,400	1,032,200	918,700	730,500
1935	809,400	(a) 20,200	829,600	934,300	639,900
1936	838,500	(a) 25,900	864,400	1,037,300	458,300
1937	(a) 1,131,700	(a) 32,700	1,164,400	1,093,800	523,700
1938	(a) 837,716	(a) 31,995	869,711	909,005	(a) 456,260

(a) Revised

F. ARCOLEO.

⁽¹⁾ *Statistical Bulletin* of the International Rubber Regulation Committee, April 1939, p. 12.

INTERNATIONAL CHRONICLE OF AGRICULTURE

DENMARK

As a result of an exceptionally good harvest in 1937 and trends favourable to agriculture in the prices both of agricultural products and agricultural requisites, the farm accountancy figures for 1937-38 indicate a distinct improvement in the financial position of Danish agriculture. The farm accountancy statistics published by the *Landøkonomiske Driftsbureau* in Copenhagen show a rise in the gross return per hectare from 616 crowns in 1936-37 to 685 crowns in 1937-38—an increase of 69 crowns. Over the same period the cost of production rose from 564 to 594 crowns, an increase of only 30 crowns. In consequence the net return increased to 4.2 per cent. of the bookkeeping value and 3.3 per cent. of the market value of the farms.

Farm accountancy statistics for 1938-39 have not yet been published, but presumably Danish agriculture in this year was not less profitable than in 1937-38. For the 1938 harvest was exceptionally good, even exceeding that of the previous year, thus also reducing imports of feedstuffs still further; while conditions on the export market were relatively good. Finally, movements of prices were in the main satisfactory, as is shown by the following index numbers of the *Landøkonomiske Driftsbureau*, which do not, however, include all goods needed in farming.

Weighted Index Numbers of Prices of Agricultural Products and Farm Requisites.

(1909-1914 = 100)

	1936-37	1937-38	1938-39 (1)
Animal products	118	129	130
Plant products	127	116	107
<i>All agricultural products</i>	118	128	128
Fodders	131	131	116
Fertilizers	93	97	97
Other farm requisites	100	94	93
<i>All farm requisites</i>	120	120	109

(1) 11 months.

As can be seen from this table, the price index numbers for agricultural products during the first eleven months of 1938-39 remained as in the previous year, whilst the price level of farm requisites fell by 8 or 9 per cent., or from 120 to 109.

Cereals market.

An important change was made by the amendment (October 28, 1938) to the law of December 22, 1937, for the regulation of cereal prices, prescribing a duty on all imported cereals and flours. This amendment makes compulsory the admixture of

a definite percentage of Danish wheat and rye to all wheat and rye imported for purposes of human consumption. Similarly all imported wheat and rye flour must be mixed with a specified percentage of Danish wheat and rye flour. The percentage of wheat to be added amounted at first to 40 per cent., but was later raised to 50 per cent. That for rye varied on different occasions between 30 and 40 per cent, but has for the present been fixed at 15 per cent. by an order of June 16, 1939. The remaining provisions of the original cereals marketing regulations were left unaltered.

Poultry market.

Further laws dealing with the marketing of agricultural products were that concerned with the internal and external trade in eggs and egg products, and that of February 22, 1939, dealing with the internal and external trade in poultry which will however, probably not come into force until October 1, 1939. The former law authorizes the Ministry of Agriculture, in consultation with a committee of egg exporters and poultry farmers, to prescribe a lower price for second grade than for first grade eggs. The Ministry of Agriculture's consent is required for the export and import of eggs and for the manufacture of egg products within the country, and the payment of a tax is also required. As before, the export regulations regarding packing, marking, etc. must be strictly observed. All hatching eggs are supervised, and a special permit and the payment of a tax based on the size of the enterprise is required for the production of such eggs. The proceeds from this tax are applied firstly to cover the costs of supervision, and secondly to pay for the educational propaganda relating to the production of eggs and the encouragement of exports. The law remains in force until April 1, 1944.

The law dealing with the internal and external trade in poultry remains valid until April 1, 1944, and requires a special permit and the payment of a tax for these operations. The regulations dealing with the slaughter, handling, packing, marking, etc. of the products for export are to be issued by the Ministry of Agriculture.

Other marketing regulations.

Since our last description of measures taken for the regulation of the markets and prices of agricultural products ⁽¹⁾ few changes have occurred in this field. With the exception of slight alterations in the provisions for their application, the *bacon* and *pig* marketing regulations and the *cattle* and *beef* regulations, have remained in force unchanged, while those for butter remain in force until December 31, 1939. The *potato meal* regulations of March 15, 1933, issued to encourage the cultivation of potatoes and their utilization for industrial purposes, have similarly been retained unaltered, as have also the main features of the *sugar* regulations, which deal with the production and prices of sugar and sugarbeet. The law of April 9, 1938 for the extension of these sugar regulations, however, raised the price of sugarbeet to 220 øre per 100 kilogrammes and that of sugar to 32 ½ øre per kilogramme. These prices were maintained when the regulations were further extended by the law of March 15, 1939.

⁽¹⁾ *Monthly Bulletin of Agricultural Economics and Sociology*, International Institute of Agriculture, March 1938.

Financial aid.

As regards Government measures for the alleviation of debts and taxes on agriculture, there have been no important changes in the regulations dealt with in the last Chronicle. The law on the right of distraint on crops allowed to suppliers of seed and fertilizers is, however, worthy of mention. This law, which aims at facilitating the supply of these goods to the farmers, was extended by a law of December 21, 1938, to cover the 1939 harvest. Further, the law relating to interest payments on State loans for the setting-up of small-holdings was modified in the spring of 1938. By this law the owner of a small-holding is given the choice of making his payments either as laid down in the previous regulations or adjusted according to the fluctuations in the returns from farms of under 10 hectares as shown by the accountancy statistics of the *Landøkonomiske Driftsbureau*. Payments made in this way may not, however, be more than 50 per cent. above or below the normal rate of interest originally fixed.

Agricultural credit.

Of legislation on agricultural credit passed in the period under consideration, the most important measures were: the law of April 13, 1938 on the building and letting of rural workers' dwellings, and the law of April 15, 1939 on the granting of State credits to small farmers' purchasing co-operative societies. The latter law empowers the Ministry of Finance to use 10 million crowns from the State Loan Fund during the five years 1939-40 to 1943-44 for the granting of loans to small farmers' purchasing co-operatives, the constitutions of which have been approved by the Ministry of Finance. The loans may only be employed for the purchase of livestock and equipment for farmers the value of whose land does not exceed 12,000 crowns. A loan from a co-operative to one of its members may not exceed 1,000 crowns, and must be repaid within 3 to 5 years. Interest at 4 per cent. must be paid on loans received by the co-operatives from the State, the amortization of these being begun at the end of five years at a rate of $\frac{1}{25}$ of the total loan. The law on the building and letting of dwellings for agricultural workers empowers the Ministry of Agriculture to apply the sum of 6 million crowns over the three years 1938-39 to 1940-41 for the purchase of building land for this purpose.

Agricultural labour.

Finally, there is the law of April 13, 1938, which came into force on July 1, 1938, dealing with paid holidays for agricultural workers, which is of great economic and social importance. It concedes to the worker the right after 25 days service to a paid holiday of one day per labour month, and thus places agricultural labourers on the same footing as other types of workers, both Government and private. The payment granted for the holiday amounts to 4 per cent. of the total wages paid over the period upon which the holiday is calculated; but if the worker accepts paid employment during his holiday he loses all right to this payment.

SWITZERLAND

The Secretariat of the Swiss Peasants' Union has estimated the gross return from Swiss agriculture in 1938-39 at 1,274 million francs, as against a figure for the preceding year of 1,258 million francs. This increase of about 1.3 per cent. has been mainly due to the greater gross profits afforded by live-stock farming.

But this slight increase in the gross return in 1938-39 has been accompanied by an increase in farm expenses due to the higher prices that had to be paid for manures and fodder and the additional expenses made necessary by the campaign against foot-and-mouth disease. Thus it was that the net returns have been lower than in 1937-38.

Amongst the measures taken in the first six months of 1939 to help agriculture the most important have been those to maintain the prices of milk, on which Swiss agriculture is primarily dependent, and to encourage arable farming in order to reduce the production of livestock, the export of which meets with ever greater difficulties.

Cereals market.

On December 12, 1938 the Federal Council sent a message to the Federal Assembly laying before it proposals for an Order on the development of arable farming ⁽¹⁾, a policy which the message declared to have become a necessity. Such a policy would make it possible to reduce the production of livestock and of milk, both of which exceed domestic requirements and can only be exported with great difficulty. The Secretariat of the Swiss Peasants' Union has expressed the view that the 20,000 hectares reserved to cereals must be increased. In the middle of the last century cereal cultivation covered 300,000 hectares, but by 1880 this figure had already fallen to 240,000 hectares. This growth of stock at the expense of arable farming was, however, interrupted by the Great War, when 100,000 hectares of grass land were diverted back to cereal production. At present the area devoted to cereals should be expanded by 75,000 hectares, whilst at least 25,000 hectares more should be reserved for hoe-crops.

This programme, which could be carried out in two or three years, would not, however, suffice to relieve the markets for livestock and milk products, nor would it adequately satisfy domestic requirements as regards foodstuffs, for these are problems which could only be solved by a more extensive programme, the carrying-out of which would require a long time. It will be necessary to extend arable cultivation and to restrict livestock production, which can best be done by setting up a "fair parity" between the prices of grain and vegetable products on the one hand and of animal products, especially milk, on the other.

The measures to be taken to extend cultivation are based on the Federal Laws of December 22, 1893 and of October 5, 1929 for the improvement of agriculture and

⁽¹⁾ *Feuille Fédérale*, No. 50, December 14, 1938.

on the Law of April 1, 1938 to ensure for the country an adequate supply of foodstuffs. The extent and the financial consequences of these measures are such that the Federal Council considered it necessary to settle the question by an Order ⁽¹⁾. The first article proclaims the basic principle of a general extension of cultivation and of the need for setting up a parity between the prices of arable and of animal products. Article three provides for subsidies on arable cultivation and for supplementary subsidies for farmers in mountain regions. Article seven deals with the conditions which can be imposed on producers, and article eight with the provision of funds to facilitate the setting-up of cooperative foal-breeding farms.

On May 23, 1939 the Federal Council issued an Ordinance ⁽²⁾ determining the means for carrying out this Order. By the first article Swiss agriculturalists are required to modify the nature of their production and to expand arable cultivation, so that agricultural production may be better adapted to the needs of the nation and the situation of the milk producers relieved. Each farm is required, as far as possible, to provide for the food needs of its own household and livestock. The Federal bodies concerned, the cantons and the communes are to see to the carrying-out of the measures taken, and in each canton a central office is to be set up to deal with arable cultivation.

But the Ordinance does not stop at laying new duties on the cantons and the communes, for the Confederation makes itself responsible for a part of the expenses. The Confederation will subsidise the purchase of farming implements, of best quality seeds, of threshing machines and of separators destined for the mountain regions. Similarly the Confederation will subsidise cultivation in the lowlands, and the production and sale of seeds. In this Order of the Federal Council dated May 23, 1939 are clauses relating to fodder cereals: oats, barley, maize, which will enjoy subsidies. The minimum rate has been fixed at 200 francs per hectare, but for mountainous regions supplementary subsidies have been provided, varying according to altitude, but which may amount to as much as 50 francs per hectare or even 75 francs in the case of oats. The expenditure will be covered by a levy, as from June 1, 1939, of 2 francs per hundred kilogrammes on the yield of the price supplements which the Federal customs impose on a certain number of imported fodders, including rye, wheat, barley, oats and the fodder maizes ⁽³⁾.

The Ordinance of June 17, 1939 governs the working of the central and the communal offices ⁽⁴⁾. The central offices in their role of executive organs of the cantons for all economic and technical matters relating to land cultivation will take all measures necessary to adapt to new uses farms exclusively engaged in fodder production, stock-farming and milk production and manufacture, as also to develop and encourage mixed farming. Where necessary the cantons may request a committee of experts to examine important questions. The central offices may entrust certain of their functions to agricultural experts (district commissioners). The communal office is the executive organ of the central office of the canton. Its purpose is to provide agriculturalists with information and to encourage the voluntary modifications which they will make in the running of their farms. As far as possible the direction of the communal office will be entrusted to the local grain administration service or

⁽¹⁾ *Recueil des Lois Fédérales*, No. 14, April 12, 1939. — ⁽²⁾ *Recueil des Lois Fédérales*, No. 19, May 24, 1939. — ⁽³⁾ *Recueil des Lois Fédérales*, No. 19, May 24, 1939. — ⁽⁴⁾ *Recueil des Lois Fédérales*, No. 23, June 21, 1939.

to an employee of the local agricultural association. The Agricultural Division makes itself liable for two thirds of the expenses for personnel and running the central offices. In order to compensate the communes for their work as regards registration and supervision the Agricultural Division will pay them 50 centimes per farmer, and 2 francs in the lowlands and 3 francs in the mountainous areas for each hectare under a crop entitling a farmer to a subsidy. The communal office will, at the proper time, distribute the cultivation forms to the producers, who will return them duly completed to the communal office by June 15 at the latest. After the manager of the communal office has checked the variety and condition of the crops, and later of the harvest, and has filled up and obtained the signature of the mayor of the commune for the recapitulatory forms, the central office will check the forms, will compare them with the reports of the district commissioners and pay out the subsidies to the producers.

Milk market.

In its message of February 22, 1938 the Federal Council expressed its serious concern about developments in the milk market. During the discussion preceding the adoption of the Order of March 30, 1938, which opened a supplementary credit to support milk prices, it had informed the Federal Assembly that the base price for milk, fixed at 20 centimes per kilogramme, could only be maintained till April 30, 1939 if there were increased cheese exports unaccompanied by increased output ⁽¹⁾. These conditions have not been fulfilled. Exportation has proved more difficult than in the past, and the increase of sales abroad has made new sacrifices necessary. In 1938 the average loss per quintal of cheese exceeded 60 francs. As the financial situation of the Confederation did not allow of the granting of further credits to the milk industry the Assembly of the delegates of the Central Union of Milk Producers decided as from December 1, 1938 to raise the price of milk to consumers by 1 centime and to lower the price paid to producers by a similar amount, the 2 centimes difference to go to the guarantee fund of the Central Union. But during their autumn session the Federal Chambers invited the Federal Council to take measures without delay for restoring the price of milk to 20 centimes and to bring forward proposals as to the means of maintaining this price. After having studied the question the Federal Council on June 5, 1939 presented to the Federal Assembly a report on the Order of April 28, 1939 which extended the aid to milk producers till July 31, 1939 ⁽²⁾. The Order in question was approved. It places at the disposal of the Central Union of Milk Producers 3,000,000 francs levied on the general receipts of the Confederation and a quarter of the product of the price increases levied on food oils and fats, as also on the raw materials needed for their production, a deduction being made of the 9,000,000 francs provided for in the Federal Budget for 1939. This Order entered into force on May 1, 1939 ⁽³⁾.

Livestock market.

Stock markets in 1938 were generally characterised by a fall in prices due to the spread of foot-and-mouth disease, prolonged drought and spring frosts. In certain regions the output of fodder was below the average. The Central Office for the Utili-

⁽¹⁾ *Feuille Fédérale*, No. 9, March 1, 1939. — ⁽²⁾ *Feuille Fédérale*, No. 23, June 7, 1939. —

⁽³⁾ *Recueil des Lois Fédérales*, No. 17, May 3, 1939.

sation of Cattle at Brougg and the other such institutions which stand as intermediaries between the mountain-dwellers and the breeders of the lowlands and which seek to encourage the sale of young animals, have had to extend the scope of their activity to cover draft animals also. It proved necessary to take special measures to overcome the difficulties in the market for slaughter animals, and the fall in prices seemed likely to be catastrophic. Thus it was that the meat preserves industry was developed.

In spite of the warnings of the authorities to the breeders the number of cattle has continued to increase, from 1,570,000 head in 1936 to 1,700,585 in 1938, whilst one to two year old heifers have increased by 21 per cent. On the other hand pigs have wisely been subjected to quotas, so that their numbers have kept within suitable limits, there having been a decline of 1.4 per cent. since April 1938.

Exports of breeding and slaughter cattle fell from 9,027 head in 1937 to 3,950 in 1938, the monetary loss having been 3.8 million francs. The countries usually importing Swiss cattle, notably Italy, have closed their doors because of foot-and-mouth disease. In the home market the Federal Department of Public Economy has sought to encourage the sale of cattle by maintaining till March 31, 1939 the 50 per cent. reduction in railway transport costs, granted by articles 24 to 27 of the Ordinance of the Department of Public Economy of August 10, 1938 and applicable to cattle, goats and sheep destined for breeding or slaughter or for their milk and wool, sent from the mountains to the lowlands. In these special cases the Agricultural Division has been authorised to grant transport facilities as from March 31, 1939 ⁽¹⁾.

Miscellaneous.

The Federal Order of December 27, 1938 ⁽²⁾ lays it down that whole flour must be composed of a mixture of cereals of which about 80 per cent. by weight must be wheat or hulled spelt and about 20 per cent. rye. The sifting rate of this flour is fixed at about 85 per cent. It is forbidden to obtain pure wheaten flour, half-white flour or food-paste from it in order to add the product of other millings to it. The grains administration authorities have established a sample type of whole flour. No flour may be whiter than the sample type, and it is forbidden to sell as whole flour anything not answering this description or to sell whole flour under any other name.

The maximum price of whole flour is 26.50 francs per 100 kilogrammes net with the sack, delivered carriage paid to the bakery. In mountain areas this price may be increased by a supplement to cover transport costs. Commercial mill-owners who wish to produce whole flour in accordance with the terms of the law and to sell it at the fixed price must send written notice of their intention to the grain authorities. In principle they are entitled to compensation for the losses resulting from the fabrication of whole flour provided the whole flour satisfies the condition laid down in the law. The compensation payments are periodically fixed by the Federal Department of Public Economy according to the conditions prevailing in the market for bread cereals.

On December 30, 1938 the first Ordinance was issued in execution of the Federal Law of April 1, 1938 to assure the country adequate supplies of indispensable food-

⁽¹⁾ *Recueil des Lois Fédérales*, No. 3, January 18, 1939. — ⁽²⁾ *Feuille Fédérale*, No. 23, June 7, 1939.

stuffs ⁽¹⁾. The Department of Public Economy is authorised to command that inventories be made of the stocks of indispensable goods and that inquiries be made as regards the inadequate stocks of certain goods: and also it may name executive organs. When the general situation so requires, it may constitute stocks for the account of the Confederation or increase already existing stocks, and it may also, by contract or other appropriate means, encourage third parties to lay up such stocks. The country must be assured of sufficient stocks of necessary commodities as far as possible by the growth of stocks voluntarily accumulated; household provisions are not excluded.

(¹) *Recueil des Lois Fédérales*, No. 17, May 3, 1939.

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RECENT DEVELOPMENTS IN AGRICULTURAL CO-OPERATION IN FRANCE

In contrast to other countries France still has neither a legal definition of co-operation nor any legislation applicable to co-operation as a whole. Admittedly as far back as 1932 a group of deputies laid before the bureau of the Chamber of Deputies a bill to give co-operation a legal status, and this bill was submitted to representatives of the various forms of co-operation for examination. Nevertheless, as yet, nothing has come of this attempt.

Recently, however, agricultural co-operatives have been more successful, and their position has now been codified by a decree of February 11, 1939.

Agricultural co-operatives must be composed exclusively of agriculturalists and may have dealings only with their members. Their capital must be composed of shares subscribed by each of the members and transferable not on the Stock-Exchange but solely by way of cession and with the consent of the society. Return on capital is in the form of a fixed interest rate not exceeding 5 per cent. excluding all dividends. Profits may only be divided among the co-operators in proportion to their dealings with the co-operative society. On the winding-up of the society the net surplus of the registered capital actually subscribed must be made over to some body or purpose of general interest to agriculture. The members must use the services of the co-operative for all or such part of the dealings as can be carried out through its agency.

Agricultural co-operatives may choose the legal status of a private company governed by the Civil Code, or of a joint-stock company under commercial law. Co-operative work, and especially the purchase of farm requisites, is in fact also performed by the agricultural *syndicats*, the legal position of which is governed by the law of 1884.

Whatever the form, however, co-operative buying has the merit that it enables the co-operatives and *syndicats* to lower the agriculturalists' costs of production; whilst similarly the selling and processing of agricultural products effected in common may reduce cost prices or raise sale prices. Credit co-operatives, on the other hand, aim at reducing the agriculturalists' costs of production by lowering the rate of interest. Similarly mutual assurance societies make lower costs of production possible by granting more favourable conditions than the capitalist companies working for profit. However, it is not customary to class such societies among the co-operatives, and besides their status is governed by a special law, that of July 4, 1900. We mention them

3. — Credit co-operatives.

Credit co-operation also long remained in rather a backward state in France as compared with other countries. The movement began in 1882 at Mentone. From there it spread to Marseilles, where a federal centre for small loans was set up. In 1893 a similar centre was established by a Lyons lawyer, M. Durand. However, these attempts by private persons to create co-operative credit societies did not develop on as large a scale in France as in other countries. Hence the State found it necessary to intervene, such intervention dating from 1894.

Agricultural credit co-operatives include in France mainly all those institutions which receive advances from the State and are subject to a State supervision which is becoming ever stricter. Their official and government character has become even more pronounced in the course of the last few years, as will be seen later in this article. They are governed by a special law of August 5, 1920 which has codified and revised numerous former laws, and which still remains in force at least in its general lines, although it has often been modified. The law states that agricultural credit co-operatives may grant three kinds of loans usually distinguished as short-term, medium-term and long-term. The organisation of these co-operatives is as it were in three tiers: at the base there are the local credit associations, above them come the regional associations and at the summit is the National Agricultural Credit Bank (*Caisse Nationale de Crédit Agricole*) which is not a free association of agriculturalists but a public body which has been granted financial autonomy by the State and by means of which it supervises and makes advances to the associations. In 1929 5,987 local credit associations with 433,417 members were affiliated to regional agricultural credit associations receiving advances from the State and regulated by the law of August 5, 1920. These regional associations had a capital of 117,715,816 francs and reserves of 100,831,614 francs.

* * *

Such was the situation of agricultural co-operatives in France on the eve of the crisis. Now it has often been remarked that times of depression are especially favourable to the development of agricultural associations. "Co-operation" said Charles Gide "has always been the result of suffering, of misery and of weakness" ⁽¹⁾. "Agricultural *syndicats*, of which many are really co-operative purchasing societies, were formed" says M. Augé-Laribé "under the pressure of economic necessity during the terrible agricultural crisis which began with the phylloxera invasion of 1875, which became worse as competition from the new countries made itself increasingly felt on the wheat markets, and which

(1) GIDE, CHARLES: *Les Associations Agricoles*, lectures on co-operation at the Collège de France, 1924-25, p. 11.

lasted till about 1900". The same author goes on to say "In their distress men instinctively gather together and seek in their union the strength which they individually lack" ⁽¹⁾. Especially easy to explain is the success of agricultural co-operatives in times of crisis. They help the peasant to earn profits again, because they make it possible for him either to lower his price on the farm or to raise his prices up to the level of his costs of production. The great over-production crisis which has affected all French agriculture since 1929 but especially the two great products, wheat and wine, well illustrates these general propositions.

In 1929 an abundant harvest in France coincided with a world-wide fall in the price-level, especially of agricultural products, which made foreign competition ruinous for the French producers.

From that time on the co-operative movement developed rapidly among French agriculturalists. But whereas the period from 1875 to 1900 had favoured the rise of associations and co-operatives for the purchase of goods the co-operatives that have shown the most remarkable development since 1929 have been those concerned with the processing and sale of goods.

II. — Development of co-operatives for the purchase of goods ⁽²⁾

As regards purchasing co-operatives, there has been retrogression rather than progress. Co-operatives for the purchase and supply of goods properly so-called, which numbered 244 at the time of the agricultural enquiry of 1929 now only number about 150.

Many agricultural syndicates instead of buying goods useful to farmers directly themselves prefer to leave such purchases to commercial companies which they set up to operate in conjunction with themselves. These companies serve as agencies not only to their members, but also to third parties, as indeed do most of the consumers' co-operatives. But by this fact they no longer answer to the legal definition of agricultural co-operative. Also it should be noted that many co-operatives for the sale of wheat carry out purchases.

III. — Development of co-operatives for the processing and sale of goods.

In 1927 the National Agricultural Credit Bank gave the number of co-operatives for the processing and sale of goods as 4,447, whilst the most recent estimate of the same body raises that figure to 7,500 ⁽³⁾. These co-operatives

⁽¹⁾ AUGÉ-LARIBÉ: *Les Syndicats et Coopératives Agricoles*, 1926, p. 11.

⁽²⁾ For the information relating to the present day situation of the buying co-operatives and *syndicats* we are indebted to M. Cramois of the *Caisse Nationale de Crédit Agricole* and to M. Caquot, president of the *Chambre d'Agriculture des Ardennes*, to both of whom we would wish to express our most sincere thanks.

⁽³⁾ *Rapport sur les opérations faites par les caisses régionales de crédit agricole pendant l'année 1937* presented to the French President by the Ministry of Agriculture, 1939.

not only increase in numbers, but also they are becoming increasingly centralised and co-ordinated. They have grouped themselves into unions or confederations. Of these bodies some have only general duties in connection with information and propaganda, whilst others carry out selling operations on behalf of the co-operatives of which they are composed, and thus are real co-operatives' co-operatives. This tendency was sanctioned by the decree-law of August 8, 1935 which gave unions of co-operatives the same legal status as the co-operatives of which they are composed.

Wheat co-operatives.

The co-operatives for the storing and sale of wheat which, as we have seen, were as good as non-existent in 1929, have shown a specially rapid development.

In face of the crisis wheat producers felt the need for organisation and discipline in their activities. Moreover, this movement was favoured by the authorities, who saw in the storing of wheat and the spreading of sales over a long period a means of combatting the wheat crisis which could hardly have been adopted by numerous unorganised producers. The law of April 30, 1930 and the decree of May 31, 1930 encouraged the creation of permanent wheat depots, the construction and use of silos and other storing places for cereals. In 1933 subsidies were paid on stored grain, and indeed it was in 1933 and 1934 that the co-operatives for the storing and sale of wheat developed most rapidly. They facilitated the application of various measures adopted by the Legislature for the organisation and protection of the wheat market⁽¹⁾. Some of them have set up silos or granaries fitted with the best devices for the handling and preservation of the grain in good condition. The total storage capacity of silos and store-houses was estimated at 8 million quintals at the time of the harvest of 1935. In 1936, just before the passing of the law on the Wheat Office, there were about 600 co-operatives for the storing of wheat⁽²⁾.

These co-operatives were then chosen as the chief bodies for the purchase and sale of the wheat harvest, thus becoming the intermediaries between the producers and the millers, who are now forbidden by law from buying directly from the producers. The original government plan would indeed have given the co-operatives the monopoly of these dealings. During the debates in the Legislature, however, it became clear that the co-operatives were still too few in number to take over so formidable a task by themselves. The grain dealers were therefore allowed to carry on their activities concurrently with the co-operatives, but subject to the strict supervision of the Wheat Office.

⁽¹⁾ For an analysis of these measures see BÖCKER, H.: *The Wheat Policy of France since 1929. Monthly Bulletin of Agricultural Economics and Sociology*, March 1935, I. 1. A.

⁽²⁾ CRAMOIS et LABBÉ: *Rapport au Conseil National Economique sur le mouvement coopératif agricole*, 1937.

Under this new regime the wheat co-operatives have indeed continued to multiply and take the place of the grain dealers. In 1937 according to the above-mentioned report submitted to the National Economic Council, their number exceeded 1,200, having thus doubled in the first year of the application of the law. The scale of the activities of these co-operatives has also shown a considerable increase. On September 1, 1937, their total storage capacity in silos and granaries was 20 million quintals of which 13 millions were rented and 7 million were in the full ownership of the co-operatives. The total sales of cereals affected by the agriculturalists through the intermediary of the wheat co-operatives during the 1936-37 season, the first season in which the law on the Wheat Office was in force, already amounted to 84.3 per cent. of the total harvest – although the harvest was admittedly a rather poor one⁽¹⁾.

The majority of these co-operatives are grouped into departmental unions which are themselves affiliated to the National Union of Agricultural Co-operatives for the Sale and Processing of Wheat (*l'Union Nationale des Coopératives Agricoles de Vente et de Transformation de Blé*) or to the National Federation of Agricultural Co-operatives for the Storing, Sale and Processing of Cereals (*la Fédération Nationale des Coopératives Agricoles de Stockage, de Vente et de Transformation des Céréales*), which have their head office at Paris. The most important unions are those of the departments of the Aisne, the Nord, the Loir-et-Cher, the Oise, and the Seine-et-Marne.

These co-operatives do, however, show certain special characteristics which have become even more pronounced since the passing of the law on the Wheat Office.

Thus, for example, they are closely dependent on the State, from which they receive considerable subsidies. Also in comparison with other agricultural co-operatives they are specially favoured as regards subsidies from the Rural Works Office (*Génie Rural*). The maximum rate of the subsidies which they can receive for the construction of silos or granaries is relatively high – it may amount to a third of the expenses, and in certain special cases may even exceed this proportion. In addition the law on the Wheat Office has provided subsidies for administrative expenses.

A part of the reserves of the wheat co-operatives come from taxes fixed and administered by the Wheat Office. The latter body is itself far from being what may properly be called an association of agriculturalists, for in its deliberating body or council are represented not only agriculturalists but also commerce, industry, consumers and high civil servants, whilst its administrative offices are staffed by civil servants and placed under the authority of the Ministry of Agriculture⁽²⁾. A guarantee fund and a special fund were set up

⁽¹⁾ The facts as to the magnitude of the operations carried out by the wheat co-operatives are taken from the *Rapport sur les opérations faites par les caisses régionales de crédit agricole pendant l'année 1937* presented to the French President by the Ministry of Agriculture in 1939.

⁽²⁾ On the Wheat Office, see Arcmif, M.: *The New Wheat Policy in France*, *Monthly Bulletin of Agricultural Economics and Sociology*, August 1937, International Institute of Agriculture.

by the law of August 15, 1936. The guarantee fund for the wheat-selling co-operatives is intended to cover any possible loss, up to a maximum of 70 per cent. in principle. The special fund is intended for the granting of special premiums to wheat co-operatives paying interest and amortisation charges on capital used in the purchase or construction of silos or collective granaries. As regards the advances received by the wheat co-operatives – mainly short-term advances which will allow them to spread their sales over a long period – these really come from the agricultural credit co-operatives which depend on the National Agricultural Credit Bank and receive advances from the State; the State's control over these co-operatives has recently become more pronounced.

These financial advantages have as their natural counterpart a close supervision by the State and the Wheat Office. In the first place, in addition to the permission of the Ministry of Agriculture which has become necessary since the decree-law of August 8, 1935 for the constitution of any agricultural co-operative, all wheat co-operatives founded since January 1, 1936 must also have the consent of the Wheat Office. All dealings for the purchase and sale of wheat carried out by the co-operatives are supervised by the Wheat Office, the National Agricultural Credit Bank and the *Administration des contributions indirectes*. In addition they, together with the other agricultural co-operatives, are subject to the supervision of the inspectors of finance and of the directors of the agricultural services.

Furthermore, although the wheat co-operative do not enjoy a monopoly, they tend in other respects, to resemble public services. Article 5 of the law on the Wheat Office provides that the wheat co-operatives may modify their statutes and deal with all wheat-producers, even if not members of a co-operative. This clause constitutes a serious exception to the rule that agricultural co-operatives may have dealings only with their members. It has been incorporated in the codification decree together with the general rule itself. Yet the administrative interpretation goes still further, for it combines article 5 of the law on the Wheat Office with article 17 of the same law, whereby the wheat co-operatives are obliged to accept all wheat that is offered them, and thus concludes that a wheat co-operative may in no case refuse to accept non-members. The Co-operatives' Union has protested against this interpretation, maintaining that the admission of non-members rests within the discretion of the co-operatives; but as yet it has not been able to make its viewpoint prevail.

Other co-operatives for the processing and sale of foods.

At the end of 1937 milk co-operatives in France totalled 2,213. It is estimated that 14 per cent. of the milk output of the country is processed and sold by these co-operatives (¹). Since the beginning of the period under consid-

(¹) *Rapport sur les opérations faites par les caisses régionales de crédit agricole mutuel pendant l'année 1937*, submitted to the French President by the Ministry of Agriculture, 1939.

eration, that is to say since 1929, the number of cheese factories has remained much the same, with perhaps a slight tendency to decline. Nevertheless they still remain the most numerous of the co-operatives for the processing and sale of agricultural products that at present exist in France. The number of milk and butter co-operatives, which was 398 according to the 1927 statistics of the National Agricultural Credit Bank, had ten years later risen to 450 (1).

The casein factories are rather in decline, both as regards the number of co-operatives adhering to the two above-mentioned federations of casein factories and as regards the amount of casein treated and especially the value of such casein. The milk co-operatives have become co-ordinated and centralised, forming unions and confederations which render them valuable services. Both the types of co-operative unions which can be distinguished—those engaged in propaganda and those engaged in selling—are represented. Two examples may be given: the National Federation of Milk Co-operatives (*la Fédération Nationale des Coopératives Laitières*) and the Central Selling Office of Milk Co-operatives (*l'Office Central de Vente des Coopératives Laitières*).

The aim of the former is to facilitate the development of these co-operatives. It must lend its aid in the founding of all bodies considered necessary for the improvement of milk products, their sale, their export to French colonies or abroad. The principal means are a publicity service in support of the co-operative movement and a technical service. This latter service is for the use both of member co-operatives and of newly-founded co-operatives to provide them with all the impartial information necessary for the construction of their factories and their commercial and technical organisation. Also it is responsible for the grouping of the majority of the milk co-operatives into regional and departmental associations.

As regards the Central Selling Office of Milk Co-operatives, it was founded under the patronage of the National Union of Agricultural Co-operatives for the Production, Sale and Processing of Goods (*l'Union Nationale des Coopératives Agricoles de Production, de Vente et de Transformation*) the General Confederation of Milk Producers (*la Confédération Générale des Producteurs de Lait*) and the Central Association of the Co-operative Dairies of the Charentes and Poitou (*l'Association Centrale des Laiteries Coopératives des Charentes et du Poitou*). The co-operatives which are members of this body bind themselves to furnish it regularly with certain quantities of products which it undertakes to sell. It supervises their methods of production and trade marks. It encourages the standardisation of milk products and has drawn up a standard formula for the making of Coulommiers cheese.

The recent development of co-operatives for the sale of fruits and vegetables has been similar to that of the milk and butter co-operatives. Here again we find both an increase in the number and membership of the co-operatives for

(1) CRAMOIS et L'ABBÉ: Rapport au Conseil National Économique sur le mouvement coopératif agricole.

the disposal of fruit and vegetables, and a movement towards co-ordination. The unions or federations which they founded have proved especially useful, the markets for such perishable commodities being very difficult of access for small isolated groups. In 1933 the National Federation of Associations and Co-operatives for Fruits, Flowers and Similar Crops (*la Fédération Nationale des Syndicats et Coopératives de Fruits, Primeurs, Fleurs et Cultures similaires*) was founded with the aim of supplementing the activities of the local and regional group. It supervises the quality of the products and sees to their standardisation, as also to that of their packing. It facilitates the creation of trade marks, the preservation of products by cold storage, and, if necessary, their exportation. It provides both an information service and a service for sales on a commission basis. The information service, however, only serves those groups which make use of the selling services. Sales are assured on the principal markets by representatives of the co-operatives, who maintain connections between the latter and the local dealers. The federation also has a supervisory service. At the end of 1933 it set up a guarantee fund to compensate groups of producers selling their products under the supervision of these services for the losses they may suffer owing to non-payment by the retail dealers.

As regards the co-operative wine vaults, again our times show the two movements, the one towards an increase in the number of undertakings, the other towards greater centralisation and co-ordination. We have seen that there were 464 co-operative wine-vaults in 1929. At the end of 1937 they numbered 717 and included 100,000 vine-growers. The capacity of their vaults is estimated at 10 million hectolitres, *i. e.* about 20 per cent. of the average annual wine production of France. The co-operative vaults too have set up several unions or federations for the study and protection of their interests and the search for new markets. These unions include almost all the co-operative vaults. In the same period the number of co-operative wine distilleries, which are the normal counterpart to the co-operative vaults, had risen from 252 to 363.

In the same year 1937, there were 72 co-operative oil-factories with 15,000 members as against 61 with 12,400 members in 1929.

As another example of the trend towards centralisation among the co-operatives for the processing of agricultural products we might mention the National Federation of the Associations and Co-operatives for the Threshing of Cereals (*Fédération Nationale des Syndicats et Coopératives du Battage des Céréales*) which in 1937 had 670 member-societies.

However, certain of the co-operatives for the processing of agricultural products have not taken part in the general development of co-operatives since the crisis and have hardly done more than maintain their positions. Such are the sugar factories and sugarbeet distilleries. The National Agricultural Credit Bank only numbers 8 sugar co-operatives. These co-operatives have to compete with capitalist enterprises which have long been very concentrated. Since 1935 the material obstacles in the way of their development have even become legal obstacles; for in that year decrees were passed making the construction of new factories for the processing of sugar-beet or its by-products dependent on a permit from the authorities.

IV. — Development of credit co-operatives ⁽¹⁾.

The credit co-operatives came through the crisis very well, and their number has remained much the same.

The regional credit societies affiliated to the National Agricultural Credit Bank (*la Caisse Nationale de Crédit Agricole*) ⁽²⁾, and to which the decree of September 28, 1935 has reserved the name of "regional credit societies" (*caisses régionales*), had on January 1, 1938 a capital of 218,900,000 francs with reserves of 290,900,000 francs, as against a capital of 117,700,000 francs and reserves of 100,800,000 francs in 1929 ⁽³⁾.

Attempts are being made to facilitate the concentration of societies, even at the possible cost of reducing the number of local societies. The regional societies are to bring about a regrouping of the local societies, which will perhaps result in a diminution in the number of these latter.

The most characteristic feature in the recent history of the credit societies is indeed this tendency towards centralisation. The local societies have become mere annexes of the regional ones, which latter have gained greater power over the local societies as a consequence of the decree-laws of 1935 and 1937. The decree-law of August 31, 1937 granted the regional societies powers similar to those which the National Agricultural Credit Bank enjoys in respect of themselves. At the same time the regional societies became increasingly dependent on the National Agricultural Credit Bank, that is to say on the State. This stricter control is the logical counterpart of the growing financial aid afforded by the State to agricultural credit.

The composition of the resources of the agricultural credit societies has changed considerably during the last few years. Advances from the State have been becoming increasingly important among their resources, whilst the means belonging to the societies themselves have become relatively small. The deposits of the peasants in the local agricultural credit societies keep very steady, whilst numerous laws have added important supplementary advances from the Treasury to the part of the dues from the Bank of France which must legally be paid to the agricultural credit societies and of which the amount is very variable. The laws of April 18 and July 15, 1935 provided for special advances for discounting operations intended to help the sale of crops and especially of the two great products of French agriculture, namely wine and wheat. Thus not only the composition of resources, but also their employment has changed, and short-term credit for the financing of sales tends to take the place of long-term credit for the financing of production, which latter seems to have been declining in importance during recent years.

(1) On credit co-operatives see AUBOYNEAU: Rapport au Conseil National Economique sur l'organisation du crédit à l'agriculture, 1938.

(2) Their organisation has been described on page 410.

(3) *Rapport sur les opérations faites par les caisses régionales de crédit agricole mutuel en 1937*, presented to the French President by the Ministry of Agriculture, 1939.

As regards the wheat harvest, these operations have increased considerably since the law of August 15, 1936 on the Wheat Office. From the putting into force of this law till the end of December, 1937 the value of bills discounted by the National Agricultural Credit Bank for the financing of the wheat harvest alone amounted to over 4 milliard francs ⁽¹⁾. For the 1938-39 season no official figures are yet available, but it is expected that they will exceed those of the previous season.

Since April 30, 1935 the supervision of the National Agricultural Credit Bank has been extended to cover even the credit societies which have not applied for advances from the State, but which are subject to the law of 1920 and enjoy the fiscal exemptions provided by this and later laws.

As regards the rural credit societies, which have never had recourse to State advances, which are not subject to the law of 1920 and which enjoy no fiscal exemptions, these seem to have lived through the crisis with little damage ⁽²⁾.

Thus it can be seen that co-operation has undoubtedly made progress in French agriculture during the last few years, but that the development of the different branches of agricultural co-operation has been a very unequal one. The co-operative organisations which have developed most are those which most closely resemble public services, among the selling co-operatives especially the wheat co-operatives, and furthermore State intervention in agricultural co-operation has been steadily on the increase. The co-operative movement has certainly been expanding, but at the same time co-operation dependent upon the State has been gaining ground relatively to independent co-operation.

M. APCHÉ.

LIVE-STOCK INSURANCE IN HUNGARY

SUMMARY: General and historical considerations - Veterinary conditions - Legal basis of live-stock insurance - Insurance companies, co-operative societies and the legal status of the local co-operative societies - Direct insurance, premiums, conditions of insurance - Prospects.

Wherever animal husbandry is of vital importance live-stock insurance is a necessary and well-understood factor in the economic life of the community. Yet in Hungary, which despite the successful industrialization of recent decades still remains predominantly an agricultural country, the progress of live-stock insurance as shown by statistics has till now been scarcely worth mentioning. Despite its long and creditable history, the problem of animal insurance cannot

⁽¹⁾ *Rapport sur les opérations faites par les caisses régionales de crédit agricole mutuel pendant l'année 1937*, presented to the French President by the Ministry of Agriculture, 1939.

⁽²⁾ AUBOYNEAU, *Rapport au Conseil National Economique sur l'organisation du crédit à l'agriculture*, 1938, p. 41.

really be said to have been definitely settled in any country, for only where compulsion has been used or considerable State subsidies granted has any notable success been achieved. Hungary, however, has always been reluctant to adopt compulsion, whilst the means for large-scale State assistance were not available.

The need for a system of live-stock insurance made itself felt already in the times of extensive stockfarming in connection with the losses resulting from epizootics; and as stockfarming became more and more intensive, this need became more and more pronounced.

The animal population of pre-War Hungary, as shown by the 1911 live-stock census, consisted of 7,319,000 head of cattle, 2,351,000 horses, 21,800 mules and asses, 7,580,000 pigs, 8,548,000 sheep and 427,000 goats, their total value being estimated at 4,598 million crowns ⁽¹⁾. By the Treaty of Trianon, however, Hungary had to cede 27.4 per cent. of its live-stock to Romania, 22.2 per cent. to Yugoslavia, 17.38 per cent. to Czechoslovakia and 2.3 per cent. to Austria, so that only 31 per cent. remained over to Trianon Hungary. In 1939 the live-stock population of Hungary - including the recently regained territories of Upper Hungary - consisted of 2,379,532 head of cattle, 939,422 horses, 3,885,643 pigs, 1,868,122 sheep and 65,972 goats, their total value being estimated at 1,000 million pengös ⁽²⁾. 40 per cent. of the national income of Hungary is derived from agricultural production, and 27.09 per cent. from live-stock farming alone exclusive of poultry farming which accounts for another 6.8 per cent. of the national income. Furthermore, as regards quality Hungary's live-stock farming has progressed very favourably, and would in every respect offer a broad and healthy basis for a considerable live-stock insurance business.

Veterinary conditions.

From the standpoint of live-stock insurance the veterinary conditions in the country under consideration are of decisive importance. Veterinary conditions in Hungary have on the whole never been worse than in the other Central European countries of the same period.

The great epizootics of the previous century - especially the rinderpest (cattle plague) which in the period 1848-75 destroyed about 500,000 head of cattle - drastically reduced Hungary's live-stock, so that right at the beginning of the constitutional regime of 1867 the Hungarian government took vigorous measures to fight against these pests. Under the law of July 1888 the Government took the first step towards creating a unified system for dealing with the health conditions amongst live-stock in Hungary. These measures combined with the destruction of all live-stock either diseased or suspected of disease, the owners receiving partial compensation from the State for animals

⁽¹⁾ See FELLNER: Das Volksvermögen Österreichs und Ungarns. *Bulletin de l'Institut international de Statistique*, Vol. XX, 1913.

⁽²⁾ See ÉBER, Ernő: Állattenyésztünk alakulásának vizsgálata. *Közgazdasági Szemle* 1939, I-11.

so destroyed, were completely successful in dealing with rinderpest. The law of February 1893 extended these State measures to contagious pneumonia (lung plague) which had meanwhile arisen and also done much harm to the cattle. Both rinderpest and contagious pneumonia were brought to Hungary from the east. Hungary's live-stock was, however, in the end completely freed from both these scourges, although admittedly in each case at considerable cost.

Under the last-mentioned law measures were also taken for the fight against glanders among horses as also against hydrophobia. State compensation was, however, limited in these cases to cases where the authorities ordered the destruction of animals known to be diseased or suspected of disease.

With the development of live-stock bovine tuberculosis also became more widespread, especially among the cows, without, however, affecting on the average more than 25-30 per cent. of the cattle of the country. As much in the interest of the live-stock of the country as to protect the health of the people the Government in 1909 issued an order granting full compensation to the owners of cattle suffering from tuberculosis in the udder or suspected to be so suffering. At the same time the foundations were laid for a systematic campaign by the State against open bovine tuberculosis by means of the destruction of all infected animals. However, the degree of voluntary support given to this destructive programme has as yet been very slight, so that by 1934 only 112 farms with 16,343 head of cattle had given it their adhesion.

A very effective measure to complete the veterinary regulations culminated in the perfection of the system of meat inspection by the police under an order of 1908. During the last few years about 18-20 per cent. of the cattle in the slaughter-yards were the subject of complaints. In the Budapest slaughter-yard during the period 1925-34 complaints were lodged against 26 per cent. of the cows, 12 per cent. of the bulls, 19 per cent. of the oxen and 2 per cent. of the pigs.

The corner-stone of the Hungarian police veterinary regulations is the veterinary law of 1928, which entered into force in 1932, and completes and codifies in accordance with present-day needs the measures previously adopted by the State.

Under this law the following contagious diseases must be notified to the authorities: rinderpest (cattle plague), anthrax, black leg, hydrophobia, glanders, foot-and-mouth disease, contagious pneumonia (lung plague) of cattle, scarbrote, covering disease, exanthem of cattle and horses, scale, swine fever, red fever, open tuberculosis, chicken pest and chicken cholera.

The defect of this law, which otherwise completely meets all police-veterinary needs, lies in the inadequate compensation paid to the owners of diseased animals. For under this law the State only pays compensation in cases where the animals were destroyed by order of the authorities as being either diseased or suspected of disease, or where the animals died as a result of vaccination ordered by the authorities.

This factor is one of the main difficulties in the way of a favourable development of live-stock insurance in Hungary, for as a result of it the risk of disease has had to be borne entirely by the insurance company.

The protection against contagious and infectious animal diseases really constitutes a separate chapter in the treatment of live-stock insurance. In other countries, especially in Germany, this sort of State compensation is known as State "insurance against epizootics" and has reached a considerable importance—for example, in 1935 Germany paid RM. 7,811,000 compensation under this heading.

Switzerland also, like Germany, maintains an important system of insurance against epizootics, and, again like Germany, it offers compensation for all such contagious diseases as anthrax, black leg, hydrophobia, foot-and-mouth disease provided that the owner conscientiously carries out all the relevant veterinary regulations. The Swiss Confederation has in many cases cleverly fitted the insurance societies into the scheme for insurance against epizootics, which societies are in this way in receipt of considerable State subsidies.

Live-stock insurance in these countries is thus relieved of considerable risks, and in the case of foot-and-mouth disease has only to bear the risks of the consequent diseases, which can be kept within moderate limits by serum treatment carried out at the appropriate time.

As is well known, anthrax and black leg can be successfully combatted by means of prophylactic vaccinations. In Hungary all dogs must be vaccinated against rabies, and as a consequence a decrease can already be noticed in the number of cases of hydrophobia among cattle.

The risk of foot-and-mouth disease, however, is difficult to estimate, because not only the date of outbreak, but also the intensity of this disease varies considerably. During the great outbreak of 1910-11 in the year 1910 1,776,597 head of cattle suffered from the disease, of which 8,358, *i. e.* 0.47 per cent. of the total, died or had to be slaughtered, whereas in 1911 1,654,356 head were affected of which 17,278—admittedly mainly calves—or 1.04 per cent. died or had to be slaughtered; and these figures do not take account of the consequent diseases. Except in the years 1935-37, when Hungary was entirely free of foot-and-mouth disease, this disease occurred each year if only in a mild form.

Nowadays the Hungarian live-stock insurance firms in the case of bulls and boars also undertake insurance against epizootics within the framework of an "all in" insurance system. In the case of other live-stock insurances only the Hungarian Mutual Co-operative Live-Stock Insurance Society accepts also the risk of foot-and-mouth disease, but under the condition that the insuring stock-owner insures all his cattle against all risks—that is to say, takes out an "all-in" insurance. This, however, is not the best solution of the problem of insurance against epizootics, which must find a broader-based solution independent of other risks. Some companies in Italy, *e. g.* the *Mutua Italiana di Assicurazione Bestiame* of Rome, have nearly reached this solution.

The veterinary surgeons of Hungary are mostly well qualified, and Hungary's veterinary college enjoys an European fame. The veterinary surgeons are not, however, altogether united in their attitude to live-stock insurance. Many surgeons admittedly adopt a negative attitude, mainly because of a certain government decree which expresses the view that it would be inappropriate for veterinary surgeons to deal with animal insurance. The Veterinary Surgeons' Chamber

in Germany has adopted a similar decision. Yet on the other hand it should be noted that live-stock insurance by means of its protective vaccinations, veterinary examinations and treatment of diseased animals gives much help to the veterinary services, increases the income of the veterinary surgeons, and offers the necessary protection against charlatans.

Nevertheless it is very desirable that the veterinary surgeons be fitted into the live-stock insurance system. The Austrian insurance law of 1917, which offers a good example of how this could be done, orders medical treatments for each animal as soon as it falls ill and the equal sharing of the costs of the first veterinary examination between the insuring stock-owner and the insurance company. The Austrian live-stock insurance companies were obliged to include this legal stipulation among their conditions of insurance. The burdens resulting to the companies are balanced by advantages, for the early intervention of the veterinary surgeon and the companies in all cases of disease has the effect of lessening the extent of the risk.

More than 1,000 veterinary surgeons are at present active in Hungary, and if we consider that in Germany, where the quantity of live-stock is many times greater, the number of professional veterinary surgeons amounts only to 7,000, we realise that the Hungarian veterinary service may also be favourably judged from this standpoint.

In order further to increase the use of the services of the veterinary surgeons the prophylactic vaccinations and examinations should be carried out at the cost of the company. Relieving the insuring owners of these expenses would both increase the readiness to be insured and would provide a more exact and reliable basis for insurance agreements.

Legal basis of live-stock insurance.

As regards the legal basis of Hungarian live-stock insurance, in the absence of any special law on insurance agreements, the Hungarian commercial law of 1875 must still be considered the main legal basis of insurance. Paragraph 453 of this law requires that each branch of insurance is able to show an insurance fund of 100,000 guilders ⁽¹⁾ – or nowadays a sum of equivalent value.

This law was completed by the law of October 1927 which regulated the payment of premiums and settled the legal basis of long-term insurance policies. In 1923 the state supervisory office was founded, which supervises private insurance in general, whilst all premiums and conditions of insurance must be in accordance with the above-mentioned legal conditions and must have received the approval of the State supervisory authorities. The legal position of the agents was defined by a government order of 1928.

Of the small local live-stock societies existing in the country only those are legally accepted as part of the insurance system which belong to the union

⁽¹⁾ 1 guilder equalled 2 crowns.

of the Hungarian Mutual Co-operative Live-stock Insurance Society, as the latter body undertakes both the general supervision and re-insurance. The local unions have no legal standing, as they do not satisfy the requirements laid down by the law.

Insurance companies, co-operative societies and the legal status of local co-operative societies.

The need to insure the considerable capital invested in ordinary agricultural and breeding animals against the consequences of disease and accidents was already felt very long ago. The first primitive attempts at live-stock insurance were in the form of certain local insurance associations based exclusively on self-protection and mutuality, which, however, nowhere had a long life because of their inadequacy, their lack of legal protection and the non-existence of re-insurance.

The first serious attempts at live-stock insurance date back to the '60s and '70s of the last century, when private capital tried to find scope for its activities in this type of business. The resulting establishments, however, always took the form of joint-stock companies, and these too proved unable to maintain themselves in Hungary. Not only the great expenses associated with the running of a joint-stock company, but also the lack of the necessary technical knowledge and experience led to considerable losses.

In 1869 ⁽¹⁾ the First Hungarian Live-stock Insurance Company was founded with a paid-up capital of 250,000 guilders, but had to wind up its activities in 1875. In 1875 the Orion General Insurance Company was founded with a paid-up capital of 100,000 guilders, which however, soon followed in the way of its predecessor. These failures also caused considerable losses to the proprietors of live-stock, who consequently for many years continued to feel a certain animosity against live-stock insurance, which even in later years constituted a serious obstacle in the way of its further development.

The '90s saw several proposals both from certain agricultural corporations and from government circles for the introduction of live-stock insurance schemes, optional or compulsory in character or a mixture of both. These proposals, however, found no acceptance among a considerable section of the farmers and hence were rejected.

The first live-stock insurance company which both met all legal requirements and adapted the experience gained abroad to Hungarian conditions was the Hungarian Mutual Co-operative Livestock Insurance Society. This undertaking which concerns itself exclusively with live-stock insurance, in its first years also had to meet considerable difficulties, but finally succeeded in overcoming all

⁽¹⁾ See Kovács, József, *Az állatbiztosítás fejlődése és szervezete Európában tekintettel hazai viszonyainkra*. (Organisation and development of live-stock insurance in Europe and especially in Hungary), Budapest, 1913.

political and financial crises, and may now be considered the mainstay of Hungarian live-stock insurance. Later it entered the First Hungarian Insurance Company, and also won the confidence of the Hungarian Government which participated in the share capital, two circumstances both contributing greatly to the moral and material strengthening of the society. This company was founded with a co-operative capital of 240,600 crowns, which was later increased to 500,000 crowns. After the War and the reconstruction of the Hungarian currency this share capital was fixed at 50,000 pengös.

Apart from this co-operative society, for the last ten years the Farmers' Co-operative Insurance Society has been engaged in live-stock insurance – mainly, however, of the male animals. The share capital of the society is probably higher and amounts to 1,546,000 pengös, but it should be noted that live-stock insurance only plays a subordinate part among the activities of this society, which in addition to life and hail insurance also concerns itself with every sort of loss or damage: thus the receipts from premiums for live-stock insurance amount to no more than 2 per cent. of the total receipts from premiums.

In addition to these two co-operative societies Hungary also has the Anglo-Elementar Insurance Company concerning itself with live-stock insurance, but only to an inconsiderable extent, so that no further mention of it will be made in the following pages.

In considering the statistics of these two societies one should avoid all comparisons with the higher figures of other countries. Due consideration must always be taken of the peculiar circumstances of the country and of the difficulties present.

The Hungarian Mutual Co-operative Live-stock Insurance Society after deducting all premium returns had in 1938 a gross income from premiums of 352,961.28 pengös, including manipulation charges. The Farmers' Co-operative Insurance Society in the same period produced 256,455.50 pengös, including manipulation charges.

Last year of these receipts from premiums, after deduction of the proceeds of sales, etc. but without taking into account the claims still under consideration, the Hungarian Mutual Co-operative Live-stock Insurance Society paid out for damages 192,309.44 pengös and the Farmers' Co-operative Insurance Society 218,007.20 pengös. In relation to the net premiums the proportion of losses amounted to 70 per cent. in the case of the Hungarian Mutual Co-operative Live-stock Insurance Society, and to 105 per cent. in the case of the Farmers' Co-operative Insurance Society; taking into account the claims under consideration would, however, raise these percentages by a further 5-6 per cent.

Foot-and-mouth disease is already on the decline, so that the losses caused by the disease are on the average lower than had originally been feared. In the outbreak in the southern districts the losses amounted to 2 per cent. of the affected animals, but this figure soon declined to 1 per cent. (1). The treat-

(1) See remarks by Prof. MANNINGER in *Köztelek*, December 7, 1938.

ment with blood serum proved successful and the vaccinations generally moderated the course of the disease. In the case of cows the milk losses have fallen from 35-40 to 5-15 per cent. Only in the case of bulls was there a noteworthy proportion of losses, 15-20 per cent. of the diseased animals – including those suffering from consequent diseases – coming to a fatal end. The hearts of these bigger and heavier animals proved unable to stand the strain.

The same experience was made in 1938 by the Live-stock Insurance Union of the province of Saxony (Germany), which reported losses in the case of bulls amounting to 23 per cent. (1).

The Hungarian Mutual Co-operative Live-stock Insurance Society in addition to its direct business also undertakes the re-insurance for the live-stock insurance co-operative societies included within its union. Realising that local co-operative societies based on the principle of mutuality and co-operation are the most appropriate for the insurance of the live-stock of small farms, this company began with the organisation of these societies as early as 1900. Backed by the vigorous support of its mother-institute, the First Hungarian Insurance Company, the Hungarian Mutual Co-operative Live-stock Insurance Society succeeded in developing this union of the local co-operative societies to become by the time of the outbreak of the War an important factor in the Hungarian economy, 918 local societies being included within it in 1914. In 1913-14 more than 2 per cent. of the cattle of pre-War Hungary were insured in this union. However, the union was severely hit by the Treaty of Trianon and the resulting partition of Hungary, as the majority of these local societies were situated in the ceded territories. The local co-operative societies are now being reconstructed, and with good prospects of success.

These live-stock insurance co-operative societies are based on the principle of mutuality, and offer their members not only the protection afforded by insurance but also veterinary treatment for their animals, medical prescriptions and all prophylactic vaccinations free of charge. The Hungarian Mutual Co-operative Live-stock Insurance Society re-insures the co-operative societies for all surplus risks. The maximum limit for premium charges is 4 per cent., and the premiums are not paid in one lump sum, but only in proportion as they are needed. In this premium are included all expenses, including the administrative costs and the re-insurance. In case this 4 per cent. does not cover all expenses, the Hungarian Mutual Co-operative Live-stock Insurance Society takes over all additional expenses and risks.

The Hungarian Mutual Co-operative Live-stock Insurance Society also supervises these co-operative societies, acts as intermediary in their dealings with the authorities, works as an educative body in all veterinary matters or questions with regard to the care of live-stock, in case of need grants the co-operative societies loans free of interest, and provides them with prophylactic vaccines free of charge. For all these not inconsiderable services the

(1) See *Beinzgers Zeitschrift für Tierversicherung*, No. 1, 1939.

Hungarian Mutual Co-operative Live-stock Insurance Society requires only a re-insurance premium of 1/2 per cent. which is included in the above-mentioned 4 per cent. In other respects these local societies retain their autonomy and settle their losses within their sphere of activities and according to the insurance conditions of the Hungarian Mutual Co-operative Live-stock Insurance Society.

It is clear that from the general viewpoint of live-stock and animal hygiene these co-operative societies serve a purpose of great value to the community. For this reason it is that the Hungarian Government encourages the foundation of such societies, and, on the suggestion of the Hungarian Mutual Co-operative Live-stock Insurance Society, makes a single lump-sum payment of 200-400 pengös to the reserve fund of each such society.

From the standpoint of the central organisation the activities of these local co-operative societies are not profitable, as the high veterinary, administrative, supervisory and organisation costs of the central organisation press heavily on the re-insurance. None the less the Hungarian Mutual Co-operative Live-stock Insurance Society is striving with all the means in its power to increase the number of these local co-operative societies, which at present is only between 40 and 50. The future development of Hungarian live-stock insurance may well be from this union as its starting point, especially as by the law of great numbers a reduction in premiums may be expected. This was already the case in 1913-14, when owing to the great number of local co-operative societies the Hungarian Mutual Co-operative Live-stock Insurance Society was able to reduce the maximum premium rate from 3 1/2 to 3 per cent.

The foundation of these local co-operative societies is based on the co-operative societies law. On their foundation the co-operative societies are registered. The organisation of such a body consists of a general assembly, a directing council and a supervisory council. The general assembly elects the directing council and the supervisory council. Generally the activities of a co-operative society cover only one commune, and only by way of exception do they also extend over one or two adjacent communes. The local co-operative societies issue shares of a nominal value of 4 pengös which may be paid in advance in equal instalments. Every member of a co-operative society is bound to acquire at least one share, to insure through the co-operative society all his cattle above three months old with the Hungarian Mutual Co-operative Live-stock Insurance Society and punctually to pay all insurance and membership fees. Every member is bound to pay a valuation fee of 20 fillers annually for each head of cattle insured, and if the insured animal is replaced by another without having suffered any injury an "alteration fee" of 40 fillers is charged.

Any surplus left over after the budget has been made out is used to lower the insurance fees and to build up a reserve fund. For the decision of the general assembly to be valid at least one fifth of the members representing at least one fifth of the share capital must be present. The President in conjunction with the Business Manager, who is chosen by the directing council, carries out the business. The directing council sees to the registration, valuation and keeping of records referring to the insured animals, arranges for the necessary vaccinations in cases of disease, takes the measures needed to prevent or reduce losses,

orders the slaughter of diseased animals and disposes in the best way possible of the useful parts of these diseased animals. The directing body decides in all questions concerning losses and submits the statements of loss to the central organisation.

Direct insurance, premiums, conditions of insurance.

In addition to these local co-operative societies the Hungarian Mutual Co-operative Live-stock insurance Society has been engaged in direct insurance right since its foundation, and, like the great German companies, seeks to offer clients various types of insurance. Direct business covers cattle, horses and pigs, but the greater part of this direct business consists of the insurance of the male animals (bulls and boars), which receives the moral support of the government and of the authorities as being to the benefit of stock-raising. Nowhere abroad is the insurance of male animals so widespread as in Hungary, and it is probably no error to say that the Hungarian Mutual Co-operative Live-stock Insurance Society and the Farmers' Co-operative Society together insure about 70 to 80 per cent. of the registered bulls and boars.

The Hungarian Government each year distributes a considerable number of male animals to the communes and pasture co-operative societies in order to improve the live-stock, and by the laws on stock-raising it is bound to insure the animals so distributed for the space of one year against losses from disease or accident. The premiums for the insurance of male animals are the same in the two co-operative societies, and amount to 3.6-4.0 per cent. in the case of bulls and 6-7 per cent. in the case of boars.

The premiums of the Hungarian Mutual Co-operative Live-stock Insurance Society for the insurance of the other forms of livestock are as follows: agricultural horses, 4 per cent.; foals 4.5 per cent.; carriage and riding horses, 5 per cent.; light draught horses, 5 per cent.; heavy draught horses, 6-7 per cent.; stallions 4.5-5.0 per cent.; thoroughbred horses, 4-5 per cent.; trotters, 4-5 per cent.; horses for obstacle-racing, 7 per cent.; young cattle under 2 years old, 3.5 per cent.; other cattle, 4 per cent.; cattle for fattening, 4-5 per cent. according to the length of the period of fattening; pasture insurance (horses and cattle), 2 per cent.; castration insurance, 1-4 per cent. according to age; pigs for fattening, 4-5 per cent. according to the length of the period of fattening. In addition there are special tariffs for insurance against losses resulting from transport, exhibition and vaccination. Greater herds of cattle may be insured *en masse* and with a franchise of the insured. The manipulation charges generally amount to 25 per cent. of the above-mentioned net premiums. The age at which animals become eligible for insurance is 3 months in the case of cattle and 4 months in the case of horses and pigs, whilst the upper age limit is between 12 and 14 years. The animal which it is decided to insure must be examined by a veterinary surgeon at the expense of the owner. By the conditions of insurance anthrax, blackleg and red fever are only compensated when it can be shown that insured animals had been vaccinated against these diseases at the proper time. The vaccine for the protective vaccinations is provided free of charge by the two above-mentioned

co-operative societies. Other expenses in connection with vaccination, as also the veterinary expenses for the treatment of the diseased animal, are borne by the owner of the animals.

Animals belonging to dealers, knackers and butchers, and further all animals badly nourished or suspected of disease are not insured. The period of partial benefit amounts to 5-14 days. Every insurance covers the case of the death or the necessary slaughter of the insured animals. Insurance against loss of value is now excluded even in the case of horses. Loss through *force majeure*, war, riot, flood etc. are not compensated.

80 per cent. of the value of the insured animal is covered by the insurance, while 20 per cent. of any loss must be borne by the insuring owner himself. A revised valuation following on the injury or loss is becoming increasingly rare. In cases of tuberculosis and liver-fluke the compensation amounts to 50 per cent. of the insured value. Similarly, if as a result of disease or accident an insured male animal becomes useless for breeding purposes compensation up to 50 per cent. is paid. Any proceeds derived from animals which had to be slaughtered or sold go to the co-operative insurance society and are deducted from the compensation due.

Despite the fact that the two above-named societies work on a co-operative basis all premiums are fixed and no additional or later payments are exacted.

The insurance of slaughter animals is still confined within very modest limits, although the official meat inspection is still strictly carried out, and under the law of October 1933 the sellers of live-stock are responsible to the buyers for the losses guaranteed by sellers. In the Budapest slaughter houses commissioners have for years engaged in a not altogether legal insurance against losses guaranteed by the sellers for which they charge a premium of 1 per cent.

Prospects.

Live-stock insurance in Hungary is still capable of much further development, for, apart from the bulls and boars, not even 1 per cent. of the live-stock of Hungary is insured against losses resulting from disease or accident. On the average the losses throughout the country do not now exceed 2.5-3.0 per cent. in the case of cattle, 3.5-4.0 per cent. in the case of horses, and 5-6 per cent. in the case of pigs, and the average annual loss suffered by live-stock owners may be estimated at 20 million pengös. In these average figures are included the losses due to contagious and infectious diseases ⁽¹⁾. The successful methods of vaccination and the steady improvement in veterinary science allow us to hope that by a not too distant date the whole question of epizootics will be solved if not completely at least in good part.

⁽¹⁾ Over a longer period 25 per cent. of the losses of insured animals are due to infectious diseases, including tuberculosis under that heading.

Live-stock insurance in Hungary will only be able to expand, however, when the question of insurance against epizootics has found a solution corresponding to present-day needs, and the farmers as in other countries co-operate to a noteworthy degree with the State in the campaign against tuberculosis.

Should such a solution be found, then the insurance premiums could be correspondingly reduced and made to agree with the average proportion of losses throughout the country. In this task there must be a division of labour between the local co-operative societies grouped together in the reinsurance union and an active and expert system of direct insurance corresponding to present-day needs. The two forms of insurance must complement one another.

The aim of every far-sighted live-stock insurance company is both to raise the prosperity of the farmers and to render the best possible service to the veterinary system and to live-stock farming in general. The more effectively live-stock insurance is able to fulfil these two functions to the benefit of the community, the lower will be the average proportion of losses and the greater the beneficial effects on the premiums.

Now and then suggestions for a State system of live-stock insurance are also to be heard, but such suggestions should not be taken seriously. However important live-stock insurance may be, a uniform and obligatory State system would necessitate such sacrifices as would outweigh any possible advantages.

T. VÁGY

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INTERNATIONAL CHRONICLE OF AGRICULTURE

UNITED KINGDOM

The last six months have been a period of increasing economic activity in the United Kingdom due in large part to the Government's armament programme which involves increased expenditure now and in the future. There has been a rapid increase in bank investments and in the active note circulation and an equally rapid decline in unemployment. The number of unemployed on the average in 1938 was 1,716,000; in the first quarter of 1939 it was 1,790,000, but in the second quarter, only 1,425,000 and the figure for June 1939 was 1,299,000, to be compared with 1,744,000 for June 1938. The board of Trade's Index of Industrial Production (base, 1930 = 100), which fell from an average of 132.8 for 1927 to 117.0 in the July-September quarter of 1938, rose to 133.4 for the April-June 1939.

Prices have risen slightly, the general index (base, averages for the year 1930 = 100) prepared by the Board of Trade, which had fallen steadily from the high point of 111.5 reached in July 1937 to 100.6 in July 1938 and to 96.6 in March 1939, stood at 98.1 in July 1939. Industrial prices have been very slowly rising since the beginning of the year, but agricultural prices have in general merely stopped falling.

Price Indices.

	1938		1939				
	July	Oct.	Jan.	April	May	June	July
<i>Board of Trade</i> (1930 = 100):							
Industrial materials and manufactures	101.9	102.4	99.6	100.1	100.8	101.3	101.7
Food and tobacco	97.8	92.6	92.5	91.4	91.9	91.9	91.2
<i>Ministry of Agriculture</i> (1927-1929 = 100) (corrected for seasonal variations):							
Agricultural prices.	94	82	84	89	86	83	87

The main feature of the levels of prices of individual agricultural products has been the continued lowness of the prices of cereals.

Farming costs have on the one hand been reduced by the low price of cereals which has made feeding stuffs cheaper; the Ministry of Agriculture's index of feeding stuff prices (1911-13 = 100) has fallen heavily from 127 in January 1938 to 117 in June 1938, 106 in January 1939 and 97 in June. Fertilizer prices have not changed, the Ministry of Agriculture's index (1911-13 = 100) remaining at about 93. Labour costs on the other hand have probably risen slightly.

The volume of imports was in many cases greater during the first six months of 1939 than during the corresponding period of 1938. Imports of wheat were 20 per cent. greater and oats, 40 per cent.; beef 2.5 per cent., bacon 6 per cent. and ham 11 per cent. Potato imports, which vary widely according to the size of home crops, were also greater. On the other hand mutton and lamb imports, recently subject to more severe government restrictions ⁽¹⁾, were smaller, and so were the imports of condensed milk. Maize imports were 6.4 per cent. less. Compared with the average for the corresponding periods of the years 1934-38 the imports during the first six months of 1939 show the following main changes: increases of about 15 per cent. in wheat imports and about 8.5 per cent. in beef imports ⁽²⁾ and about 4 per cent. in bacon and ham imports. Decreases in maize, 9 per cent., oats, 23 per cent., condensed milk, 16 per cent.

The total value of the imports of agricultural products—products grouped under the heading: Food, Drink and Tobacco ⁽³⁾—was lower during the first half of 1939 than during the corresponding period of 1938; the figures being £199,678,921 and £211,094,784 respectively. The value of grain imports fell, as a result mainly of lower prices, from £39,858,601 to £29,518,566 this change being almost equal to the change in the total value of agricultural imports.

⁽¹⁾ See page 435-6.

⁽²⁾ Which are regulated by the International Beef Conferences. See the April 1938 number of the Chronicle, p. 214.

⁽³⁾ Not all these products are competitive with products of agriculture in the United Kingdom.

There has been considerable and important agricultural legislation during the past six months. Existing measures have been modified, in respect of milk by the *Milk Industry Act*, ⁽¹⁾ in respect of wheat by the *Wheat Amendment Act* 1939 and in respect of barley and oats by the *Agricultural Development Act*. Further branches of agriculture have been brought within the scope of government programme of assistance and centralised organisation; the sheep industry by the *Agriculture Development Act* and the poultry industry by the *Poultry Industry Act* ⁽¹⁾; now all the most important branches are within this programme. Government policy has, in the past two years, become increasingly concerned with the conditions of agricultural production in general, and less with emergency measures of relief to individual branches, on which it previously concentrated. Thus in 1937 the *Agriculture Act* provided a subsidy to encourage the use of fertilizers ⁽²⁾ and allowed new incentives to the improvement of animal health to be given. This aspect of policy has now been further extended by the provision, in the *Agricultural Development Act* 1939 for a new subsidy for the improvement of grassland.

Agricultural Development Act, 1939.

This Act which came into force on July 28, is an omnibus Act, containing four distinct measures:—

- (1) An increased subsidy for oats ⁽³⁾.
- (2) A new form of assistance for barley growers ⁽⁴⁾.
- (3) A price guarantee for sheep-farmers ⁽⁵⁾.
- (4) A subsidy for land improvement through the ploughing-up of inferior grassland ⁽⁶⁾, and other measures concerning agricultural credit ⁽⁷⁾, and agricultural machinery reserved ⁽⁷⁾.

The estimated maximum payments under the Act are:—

Annual:—

Oats	4,500,000
Barley.	1,500,000
Sheep	2,500,000
Credit.	60,000
	8,560,000

1939 only:—

Machinery reserves	1,250,000
Ploughing-up of grassland	500,000

Total . . . 10,310,000

⁽¹⁾ To be described in a subsequent Chronicle to be published shortly. — ⁽²⁾ See page 437. — ⁽³⁾ See page 432. — ⁽⁴⁾ See page 432-4. — ⁽⁵⁾ See page 435-7. — ⁽⁶⁾ See page 437-8. — ⁽⁷⁾ See page 438.

Oats market.

A subsidy for oat-growers, payable when the price of oats fell below 8s. per cwt., was provided for by the Agricultural Act, 1937. This subsidy was however not a guarantee of a minimum price of 8s. per cwt. for the subsidy was to be at the rate per acre of either six times the difference between the actual market price and 8s., or £1 per acre, whichever was less, whereas the yield per acre of oats is about 16 cwt. per acre. A grower of both wheat and oats could not receive a subsidy on both crops, and had to choose either the wheat subsidy which guarantees a minimum price, or the oats subsidy, which was less favourable. A standard total acreage was also to be established for each cereal year: this was to be the maximum acreage on which the subsidy would be payable.

The Agricultural Development Act, 1939 now gives the farmer improved conditions. First, the rate of subsidy is increased to 14 times the price difference, with a maximum of £2.6s.8d.; thus it becomes practically a guarantee of a minimum price except when the market price falls very low, lower than it is at present. Second, the subsidy is payable in addition to any subsidy payments that the grower may receive on a wheat crop; in this case, however, the subsidy is at the old rate of six times the price difference with a maximum of £1. The standard price of 8s. per cwt. is retained, but provision is made for varying it.

The total subsidy is limited by fixing a maximum acreage on which the subsidy will be payable. The laws fixed 2,500,000 acres, 1,470,000 for growers not receiving wheat subsidies and 1,030,000 for those who do.

The standard acreage fixed for oats in 1938 under the 1937 Act was 1,286,855 acres.

If the total actual acreage exceeds the maximum the rate of the subsidy will be reduced proportionately.

The maximum exchequer liability in any one year will be £4,500,000. The maximum liability in any one year under the old scheme was £1,440,000. If the scheme had been working during the last six years the average annual subsidy paid would have been £2,230,000.

The new rate of payment is applied retrospectively to the year 1938; the rate for 1938 under the 1937 Act was 13s. 2d. per acre; this is now raised by a supplementary payment of 18s. 4d. per acre to £1. 11s. 6d., while growers of both oats and wheat who receive wheat payments and who received no oats subsidy under the 1937 Act, now receive 13s. 6d. per acre on their oats' acreage.

The rate of subsidy for 1938 under the 1937 Act was so established: the average realised price for the seven months ending March 31, 1939 was declared to be 5s. 9d. per cwt., this gives a subsidy of six times the difference between 5s. 9d. and the standard price 8s., so a subsidy of 13s. 6d. per acre; but the acreage yielding oats in 1938 was 2 per cent. above the standard fixed by Order; therefore the subsidy payable per acre on the total crop was reduced by 2 per cent. to 13s. 2d.

It is to be noted that under the retrospective provisions of the new Act fixed the maximum acreage at 2,500,000, the actual average of the crop is less than the maximum and therefore the full rate is now payable, *i.e.* fourteen times 2s. 3d. (or six times in the case of those receiving wheat payments).

Barley market.

Efforts to assist the barley-grower have been made in two ways in the past three years. In 1936 the Brewers Society assured the growers a market for a part of their crop by undertaking to purchase a minimum quantity—7,500,000 cwt.—of home-

grown barley. In the following year the Agricultural Act 1937 provided that when a subsidy was payable to oats-growers a similar subsidy should also be paid to barley-growers. This subsidy was based on the oats price, and the rate payable has been too low to satisfy the growers, particularly in conditions such as prevailed during the past twelve months when barley prices have fallen rather more rapidly than the price of oats; moreover the subsidy was not payable to those growers who also grew wheat and received a wheat subsidy, and for this reason only about 20 per cent. of the total barley acreage qualified for the subsidy last year. The subsidy payable on the 1938 crop was fixed at 10s. 10d. per acre ⁽¹⁾; this is equivalent to about 8d. per cwt. The price of barley fell about 3s. per cwt. on the average in 1938.

Now by the *Agricultural Development Act* an effective price insurance is to be given to barley-growers.

About half of the total annual production, which is on the average about 850,000—900,000 long tons, is sold to brewers for malting; and the Act proposes two methods of guarantee, one for malting barley and one for other barley. The users of malting barley are organised to act as a body, and they have agreed to co-operate in a scheme to ensure a reasonable price for malting barley. The guarantee for other barley is to be financed entirely by the Exchequer.

Malting Barley. — The Act provides that a scheme shall be drawn up and submitted to Parliament for approval and that it shall be one of two kinds:

(a) A minimum price scheme. Under such a scheme the users of malting barley would be required to pay prices not lower than a fixed minimum and to purchase not less than a given quantity of barley.

(b) A levy-subsidy scheme. This would provide for the payment by brewers and importers of beer ⁽²⁾ of a levy at a rate per unit of output or import of beer, the rate to be determined in accordance with the ascertained realised price for barley. The receipts from the levy would provide a fund from which a subsidy would be paid to growers of barley ⁽³⁾.

Other Barley. — The grower is to be guaranteed an average standard price of 8s. per cwt.; the funds required to be provided by the Exchequer. Provision is to be made for varying the guaranteed price. The price ruling at present is well below this guaranteed minimum ⁽⁴⁾.

The maximum rate of subsidy is to be £ 2.13s. 4d. per acre.

The maximum output to be covered by both means is to be 18,000,000 cwt.

(1) The subsidy per acre on the standard acreage was fixed on the basis of realised oats prices, at 13s. 6d. as we have seen above; but the actual acreage of barley on which the subsidy was payable was 165,181, i.e. 24 per cent. in excess of the standard; therefore the rate for barley was reduced 24 per cent. to 10s. 10d.

(2) And by such manufacturers or pot still whisky as do not obtain exemption.

(3) This is similar to the wheat levy-subsidy scheme described on page 435 and more fully in the Chronicle for the United Kingdom published in September 1938, p. 437.

(4) The average monthly price for English "Gazette Average" fell below 8s. per cwt. in November 1938 and has since steadily declined till now, July 1939, it is quoted at November 6.15s. The average price for 1938 was about 9s. 3d.

Retrospective assistance for the 1938 crop is provided by granting the growers the same rate of subsidy as that received by oat growers, *i. e.* £ 1.11s.6d. per acre for those who received no wheat subsidy and 13s. 6d. per acre for those who did. This involves a payment in addition to the 10s. 10d. already paid to the first class of growers; the extra cost to the Exchequer will be about £ 800,000.

Special provision is made for the year beginning on August 1, 1939, as there was insufficient time to prepare a long-term scheme to operate for the 1939 season. A temporary levy-subsidy scheme is to be worked.

A subsidy is to be paid to growers in the event of the ascertained average market price for the six months August, 1939 to January 31, 1940, falling below 10s. per cwt. The rate per acre of the subsidy is to be 15 times ⁽¹⁾ the price difference, with a maximum £ 1. 10s. per acre.

Funds for the subsidy are to be obtained from a levy on beer manufactured in the United Kingdom and on imported beer ⁽²⁾, the amount so obtained to be supplemented as far as necessary by a contribution from the Exchequer. The rate of levy will be determined on the basis of a scale related to the market price of barley; no levy is payable if the average market price of barley is over 9s. 11d. per cwt. and a maximum of 1s. per standard barrel of beer is payable when the average price is below 8s. 1d.

The Ministers responsible for agriculture have estimated that the average market price of barrel for the six months August 1, 1939 to January 31, 1940 is likely to be 8s. 7d.; and on this basis a levy of 9d. per standard gallon is to be imposed at present on beer ⁽³⁾.

Wheat Amendment Act, 1939.

Wheat-growers have since 1932 been guaranteed a minimum price of 10s. per cwt. for their output. This price was fixed in the first place for three years. In 1935 a Committee was appointed by the Minister of Agriculture to consider what the future guaranteed price should be; it decided that the existing price should be retained, and the wheat-grower has up to the present continued to receive subsidies to bring the market price for wheat up to 10s. per cwt.

Now it has been decided that the guaranteed price shall again be reviewed, and not only this year, but subsequently every three years. A committee will be appointed which will consider whether 10s. per cwt. is a proper price in existing circumstances. Farmers will be able to show that wage rates and other unit costs of means of production have risen since 1932, but the committee will have to take account of the extent to which improved production technique has increased the efficiency of the means of production and so tendend to reduce costs per unit of output.

The first part of the new Act provides for the price review; a second part is concerned with the clarification and modification of the definitions of flour and wheat offals.

⁽¹⁾ The yield per acre is on the average about 16 cwt.

⁽²⁾ And a similar levy on pot-still whisky.

⁽³⁾ And 3d. per proof gallon on pot-still whisky.

The guarantee of a minimum price for wheat is given by means of a levy-subsidy scheme. Every miller and every importer of foreign flour is required to pay a levy which furnishes a Wheat Fund from which subsidies are paid to wheat-growers. The rate of the levy is fixed from time to time in accordance with forecasts of the size of the subsidy payments that will be required to bring the prices realised by the grower on the market up to the guaranteed minimum. Thus during the past year as the market price has been falling the rate of levy, *i. e.* the rate of "quota payments," has been rising. In January 1938 the rate was 4.8*d.* per cwt., and in January 1939 it was 31.2*d.* the highest rate ever imposed. On June 18, the rate was reduced, however, to 26.4*d.* The subsidy paid to growers in respect of the 1938-39 crop was 5*s.* 0.56*d.* a cwt.; *i. e.* much higher than that for 1937-38 which was 1*s.* 7*d.*

The ascertained average sale prices for 1938-39 was 4*s.* 6.786*d.* per cwt. the lowest since the Wheat Act came into force. The difference between this and the standard, or guaranteed price was 5*s.* 5.214*d.* The subsidy payable is at a lower rate for two reasons. First the Wheat Commission's administrative expenses have to be met by the wheat-growers; for this 0.473*d.* was deducted from the rate, leaving 5*s.* 4.741*d.* Second, the quantity certified as sold in 1938-39 was greater than the "anticipated supply" fixed for 1938-39 and the Act provides that in this case the subsidy shall be proportionately decreased; the anticipated supply, 34,330,000 cwt. is 93.542 per cent. of the quantity certified as sold, 36,700,000 cwt.; therefore each grower will receive 93.542 per cent. of 5*s.* 4.741*d.*, *i. e.* 5*s.* 0.56*d.* a cwt. on all the certified sales credited to him. In the last two years the anticipated supply exceeded the actual sales and such a reduction was not made (¹).

Sheep.

Sheep prices fell heavily in 1938 (²) and sheep farmers—whose output (sheep, lambs and wool) in 1937-38 valued £17,700,000, compared with a total value of agricultural output of £223,500,000 appealed to the Government for help. The first thing the Government did was to provide for closer regulation of imports (³).

Regulation of imports. — About 80 per cent. of the imports of mutton and lamb come from New Zealand and Australia; and to regulate these and other empire supplies the Government suggested the extension of the Empire Beef Council (⁴), a voluntary

(¹) See the Chronicle for September 1938, p. 437-8 where a summary of the working of the scheme since its inception in 1932 is given.

(²) The Minister of Agriculture has given the following figures for the average prices, per lb. estimated dressed carcass weight of first and second quality fat sheep at representative markets in England and Wales:

1933	9 <i>d.</i>
1934	10 $\frac{1}{4}$ <i>d.</i>
1935	10 $\frac{1}{2}$ <i>d.</i>
1936	10 $\frac{1}{4}$ <i>d.</i>
1937	11 $\frac{1}{2}$ <i>d.</i>
1938	8 $\frac{3}{4}$ <i>d.</i>

(³) The quantity of imports of mutton and lamb during 1938 was about the same as it was in 1937.

(⁴) See the April 1938 number of the Chronicle for the United Kingdom p. 214.

organisation set up in 1937 and consisting of representatives of empire meat exporters and United Kingdom producers. This Council thus became the Empire Meat Council. Previously agreements concerning lamb and mutton had been made from time to time, beginning in 1935, through the Governments of the countries concerned.

The Council failed to agree, and therefore in February 1939 the Board of Trade announced that the licence system established by an Order made in January 1939 under the Livestock Industry Act 1937⁽¹⁾ would be used to reduced imports from Dominions to a quantity 3 per cent. below the quantity imported in 1938.

At the same time quotas for foreign countries were reduced 10 per cent.

The reasons making these reductions necessary were stated by the President by the Board of Trade as follows:— (a) that very low prices were obtained for home-produced mutton and lamb last year (1938) when there was an increase in home production and no corresponding fall in imported supplies; (b) that the prices received for the home product continue unsatisfactory; (c) that a further increase in home production is expected in the current year (1939); (d) and that stocks of frozen mutton and lamb in cold store are abnormally high.

Guarantee of minimum price. — More drastic action was taken by the Government through the provision in the Agricultural Development Act, 1939 for the guarantee of a minimum price of 10d. per lb. dressed carcass weight.

The scheme to be prepared for this purpose will be similar to those of other price guarantees⁽²⁾. Average monthly market prices will be officially ascertained and if these fall below the standard, or guaranteed price, a subsidy financed by the Exchequer will be paid to make good the difference.

The guarantee is limited to a maximum of 27,000,000 sheep. If the sheep population in any year exceeds this number the rate of subsidy will be proportionately reduced.

The guaranteed price will be reduced by $\frac{1}{8}$ d. for every 250,000 in excess of 27,000,000 and by $\frac{1}{4}$ d. for every 250,000 in excess of 28,000,000.

If the scheme had been in operation during the last six years 1933-1938, the average annual cost to the Exchequer would have been £900,000; last year, 1938, the payments would, however, have amounted to £2,500,000.

Two particular features of the details of this scheme are noteworthy.

First, the price guaranteed is an annual average, but the subsidy will be calculated on a monthly basis. For the purpose monthly guaranteed or standard prices, reflecting seasonal variations, will be calculated; and these will be then related each month to the average market price in order to calculate what subsidy, if any, is payable.

Second, sheep when sold in the livestock market are not weighed but are marketed according to class. But as the price guaranteed is a price per lb. dressed carcass weight, official standard weights are to be established for each class of sheep⁽³⁾.

(1) Sheep Mutton and Lamb (Import Regulation) Order 1939. (S. R. and O., 1939 No. 4). The necessary amendment of the Ottawa Agreement Act, 1932 was made by the Ottawa Agreement (Importation of Meat) Amendment Order, 1939 (S. R. and O., 1939 No. 5).

(2) A brief summary of the differences between the various forms of guarantee given will be found in the "World Agricultural Situation in 1938-39", section on United Kingdom, to be published in the near future by the International Institute of Agriculture.

(3) The basis of the official classification has not yet been established; it is probable that two classes determined by minimum and maximum weights will be set up, and a single "standard" weight fixed for all sheep coming within a particular class.

The subsidy receivable by the producer on any particular sheep will therefore be the difference between the guaranteed price for the month in which it is sold and the average market price for that month, multiplied by the standard weight of sheep of the class in which this particular sheep falls.

Land improvement.

Fertilizer subsidy. — In 1937 a policy of encouraging the improvement of land fertility was initiated by the Agriculture Act passed in that year. A subsidy was provided to cover part of the cost of fertilizers bought by the farmers: 50 per cent. of the cost of lime and 25 per cent. of the cost of basic slag.

This scheme has led to a big increase in the use of fertilizers; in the year ending March 31, 1939 about 2,115,000 long tons of lime and 400,000 tons of basic were used. These figures show an increase over those for the corresponding period before the coming into force of the scheme, of 400 per cent. in the case of lime and 70 per cent. in that of basic slag. The use of basic slag was, moreover, restricted by a shortage of supplies.

The increase in amounts used was greater than the forecasted increase, and therefore it was necessary in February 1939 for an additional amount of £156,100 to be made available to the Minister of Agriculture for the subsidy. The original estimate for 1938-39 was £1,282,000; the amount made available in the budget for 1939-40 is £1,539,900.

Ploughing-up of grassland. — A further incentive of the improvement of the condition of the land was given by the Agricultural Development Act passed this year. The Act provides a subsidy of £2 an acre ⁽¹⁾ in respect of permanent grassland ploughed up before September 30, 1939, and brought into a state of cleanliness and fertility and then re-seeded.

The object of this measure is to encourage farmers to carry out work which in any case is desirable in order to convert poor or worn-out grassland into more productive pasture, and would enable the land to be readily used, as arable land, for raising such crops as might be required to supplement supplies of food or feeding-stuffs.

The nature of this incentive is described by Sir George Stapledon, the well-known expert on grasslands in the United Kingdom, in the following terms: "with the slag and lime subsidy added they (the farmers) are being paid something approaching half the cost of even the most expensive operation necessary to produce enormously enhanced fertility".

In order to qualify for the subsidy applicants are required to satisfy the Ministry of Agriculture that the land:—

- (a) has been under grass for at least seven years;
- (b) has been or is being brought into a state of cleanliness and fertility by approved methods such as by fallowing, by direct re-seeding or, subject to the approval of the Agricultural Department concerned, by taking a suitable catch crop during the present year; for example, mustard, vetches, rape, kale, turnips, buckwheat and mixtures of rye grasses and clovers.

⁽¹⁾ The minimum area eligible is 2 acres, and the minimum unit for the calculation of larger areas is $\frac{1}{2}$ acre.

(c) is land that will be likely to benefit by such cultivations with a view to re-seeding or re-introduction into a suitable rotation, and would be likely, if the need were to arise, to produce satisfactory arable crops for harvesting in 1940.

It was officially announced in August that the area to be ploughed under the scheme was at that time 170,600 acres in England and Wales alone.

Agricultural machinery reserves.

A further provision of the Agricultural Development Act, 1939 is that the Minister of Agriculture may establish a reserve of tractors and other agricultural machinery which would be used, should need arise, for increasing the home production of food. An amount of £ 1,250,000 has been allocated to this purpose.

Agricultural credit.

The Agricultural Mortgage Corporation established under the Agricultural Credit Act, 1928 has met with difficulties in recent years owing to the heavy fall in interest rates since 1932; the Corporation's loanable capital was raised at 4 ½ per cent. and 5 per cent. interest by the issue of debentures before 1932.

To assist the Corporation it is provided in the Agricultural Development Act, 1939 that the Exchequer is to make payments to the Corporation of not more than £ 60,000 a year for 20 years. This will allow the Corporation to continue to make loans at the existing rate of 4 ½ per cent.

C. PERRING.

URUGUAY

Being so largely dependent on world markets, the general position of Uruguay, its production and its export trade, together with the conditioning and limiting factors on which they are based are very much subject to the general economic crisis and the contraction of export markets resulting from the restrictions imposed on imports by some countries and the Ottawa Agreements. Under these circumstances Uruguay had no alternative but to limit imports and as far as possible to act according to the well-known principle "I buy from those who buy from me", whilst at the same time encouraging home production in order to attain as great a degree of self-sufficiency as possible.

Commercial and financial policy.

Commercial and financial dealings are subject to a strict control based on a law of November 9, 1934. An Import and Exchange Control Board takes note of the value and destination of all exports, calculates the amount of foreign exchange required by importers, and generally supervises the use made of foreign exchange. Imports from the various countries are fixed by quotas based on their own respective imports of Uruguay products. These quotas are supposed to amount to not less than 75 per cent. of the foreign exchange coming to Uruguay from its exports to the country concerned; but payments for public and private debts are included in the quota.

The total quotas are then divided among the individual importers according to the importance of the particular good by means of import licences. The import licences are mostly granted for imports from countries with quotas at the controlled exchange rate. To a lesser amount import licences are also granted in free exchange—the difference between the controlled and the free exchange is about 30 per cent.—but only for such goods as cannot be obtained from countries with quotas.

Exchange control has undergone several changes in matters of detail since 1934. On December 4, 1937 the one official exchange rate till then in force was abolished and replaced by different rates for the purchase of foreign exchange from exporters and the sale of foreign exchange to importers. Exchange resulting from exports must be made over by the local banks to the *Banco de la República* at the rate of 7.60 pesos to the Pound sterling, which rate has throughout remained unchanged. The selling price of exchange to importers on the other hand has several times been raised, and most recently so by a Government decree of December 31, 1938 ⁽¹⁾, which raised the selling price from 8.58 to 9.50 pesos per Pound sterling as from January 1, 1939. This step was taken largely in order to check the increase in imports which had taken place in 1938, for owing to the poor wool season of 1937-38 and the low wheat prices of the world market the authorities had foreign exchange at their disposal only in inadequate quantities. The profits resulting from the difference between the buying and the selling price of pesos are estimated at 6 million pesos per annum ⁽²⁾, and are used by the State for the payment of export subsidies, the carrying out of public works, especially the construction of the roads so necessary for purposes of settlement and live-stock transport, as well as for other purposes of general utility.

Equally characteristic of the commercial policy of Uruguay is the great development of the bilateral exchange of goods, 70 per cent. of the country's total trade now being conducted in this way. During the period under consideration the conclusion of the new treaties with Paraguay and Italy and the prolongation of the treaty with Germany are items worthy of mention.

The growing co-operation and interlocking of the Latin-American States in matters economic is well exemplified by the Uruguay-Paraguay commercial and shipping treaty of December 26, 1938, this being indeed the first such treaty concluded by Paraguay since she denounced all her trade treaties in 1923, which fact gives Uruguay an initial advantage as against possible later trade partners of Paraguay. It is based on the most favoured nation clause, and mainly provides for reductions and abolitions of tariff rates and the free storing of goods, especially wood, whilst also giving Uruguay welcome transit facilities to Bolivia and Matto Grosso (Brazil). The treaty concluded on January 1, 1939 with Italy provides for a considerable increase of the trade turnover between Italy and Uruguay (from 116 to 360 million lire). Uruguay is mainly to furnish frozen meat, wool and grain, while Italy is to supply textile goods, chemical products and machines. Finally on January 20, 1939, Germany and Uruguay prolonged the agreement of November 1934 till the end of 1940.

In comparison to other countries the United Kingdom is still Uruguay's most important trade partner, even though both imports and exports between the two countries have declined in absolute figures, despite a readiness to trade on both sides. On the export side the Ottawa Agreements are adversely affecting Uruguay's beef exports,

⁽¹⁾ *Diario Oficial de la Republica Oriental del Uruguay*, No. 9713, January 14, 1939.

⁽²⁾ *Ibero-amerikanische Rundschau* - 4th. year, No. 12, February 1939, p. 395.

and an increased wool export to the United Kingdom is not possible as the wool imports there are not subject to restrictions, so that the buyers can purchase whichever wool they prefer, whilst for Uruguay's other export products there is little demand in the United Kingdom.

Germany, on the other hand, rose to second place in Uruguay's list of customers in 1938, partly as the consequence of the building of the great Rio Negro electric power works, which was undertaken by a German consortium and 40 per cent. of the price of which is being paid in such Uruguay products as wool, meat and skins. Germany's exports to Uruguay, however, have also steadily increased, as several countries, including the United States, which used to export more to Uruguay than did Germany, bought little from Uruguay in 1938 with the result that correspondingly little foreign exchange was available for imports from these countries.

TABLE I. — *Uruguay's Exports, 1932-37.*
(Percentages of total value)

Product	1932	1933	1934	1935	1936	1937
Live-stock						
Meat and meat extracts .	32.14	27.56	31.84	22.46	17.63	19.79
Hides and skins	12.94	13.83	13.00	13.28	11.71	13.87
Fats and tallow	1.92	1.62	1.43	3.08	1.31	0.77
Wool	32.01	37.74	25.85	40.35	46.54	45.93
Other live-stock products(a)	3.37	3.27	(b) 0.33	(b) 6.39	2.87	4.05
Total . . .	82.38	84.02	78.45	85.56	80.06	84.41
Arable farming						
Cereals, (c) flour and food-pastes	6.83	5.54	14.01	7.14	12.73	9.38
Other products of arable farming (d)	0.49	0.31	0.00	0.51	1.35	0.53
Total . . .	7.32	5.85	14.61	7.65	14.08	9.91
Other exports	10.30	10.13	6.94	6.79	5.86	5.68
Grand Total . . .	100	100	100	100	100	100

(a) Including live animals, bristles, horns, guano, bones and bone-ash. — (b) The exports of live animals rose from 1.04 per cent. in 1932 and 0.96 per cent. in 1933 to 3.74 and 4.24 per cent. in 1934 and 1935 respectively, after which they again fell. — (c) Including linseed. — (d) Including fruit and vegetables, fodder and oil-cakes.

Live-stock.

Cattle. — Uruguay is indeed especially well-suited for cattle-farming because of its natural pastures, its abundance of water, and its temperate climate which makes it possible to allow animals to pasture in the open throughout the year. According

to the stock-censuses from 1860 to 1937 Uruguay's cattle population has been as follows:

1860	3,632,293
1900	6,827,428
1908	8,192,602
1916	7,802,442
1924	8,431,613
1930	7,127,912
1937	8,296,890

The export of live animals to neighbouring countries is inconsiderable. Similarly the export of dry jerked beef (*tasajo, charque*) which in pre-refrigeration days used to be of great importance for Uruguay, has almost completely ceased. On the other hand the export of tinned, chilled and frozen meat is as important as ever.

From 1931 to 1937 tinned meat exports amounted to about 10 per cent. of Uruguay's total exports, 60 per cent. going to the United Kingdom. In 1937 the exports amounted to 34,251 metric tons valued at 6,299,650 pesos and in 1938 to 22,245 tons valued at 5,374,607 pesos, whilst in the first half of 1939 exports have risen as compared to the same period last years.

The export of frozen and chilled meat has suffered heavily as a result of the Ottawa Agreements and the further regulation of meat imports into the United Kingdom by the International Beef Conference, which each quarter divides the quantities of meat the United Kingdom can absorb among the countries concerned. The frozen meat exports amounted in 1937 to 30,466 metric tons valued at 3,975,234 pesos and in 1938 to 40,441 tons valued at 6,595,161 pesos, whereas chilled meat exports declined slightly from 31,747 to 25,337 metric tons valued respectively at 5,260,157 and 5,174,944 pesos. When meat was first chilled and transported to foreign markets Uruguay and Argentine had the advantage over most other non-European countries of being nearer to the market, for the length of time during which chilled meat could be transported without deterioration was shorter than the time required for the transport from these more distant lands. But since 1932 as a result of improved transport conditions and of the impulse given by the existence of the markets provided by the Ottawa Agreements the production of chilled meat in Canada, the Union of South Africa, Southern Rhodesia, Australia and New Zealand has increased to the extent that in 1937 the imports from these countries already amounted to 10 per cent. of the total chilled meat imports of the United Kingdom, which still remains the greatest importer of chilled meat as it formerly also was of frozen meat. Since 1937 Germany has been the greatest importer of South American frozen meat and the second greatest of South American beef in general. Although the quality of Uruguay beef has been gradually improved, yet in the United Kingdom it still mostly obtains lower prices than does Argentine beef; only in the trade with Germany is the case reversed.

A very important export of Uruguay's is hides and skins.

Attempts are being made to overcome the difficulties in the way of selling more meat by improving the quality, by the granting of export subsidies (1937), and also through an expansion of milk production, which at present amounts to about 1.7 million hectolitres per annum. The cheese and butter production is trifling.

Great attention is also being devoted to the campaign against cattle diseases, hence the decrees of October 6 ⁽¹⁾ and 13 ⁽²⁾, 1938 which are also of some importance to sheep producers. The main campaigns are those against scabies, anthrax and abortus Bang and also the campaign against ticks.

Sheep. — According to the live-stock census of 1937 there were in Uruguay in that year 17.9 million head of sheep as against 20.5 million in 1930. This decline shows the losses caused by disease and flood, but is also partly the result of the lower wool prices prevailing since 1930 and the consequent trend to increased cattle breeding. Since 1936 efforts have mainly been directed towards securing an improvement in quality by better crossing methods and by the production of animals giving both good wool and good meat. The home consumption of mutton and lamb is insignificant, the main market being the United Kingdom, especially for the frozen meat.

The chief breeds produced in Uruguay for wool purposes are Merinos for fine wool and Lincolns and Romney Marsh for coarse wool; the native breed (*vaca criolla*) on the other hand has wholly disappeared. The direction of wool production has changed considerably since 1930. Whereas in that year Lincolns constituted 38.7 per cent. of the total sheep population, Romney Marsh 38.8 per cent. and Merinos only 19.8 per cent., in 1937 as a result of increased demand for the finer wool Lincolns had fallen to 16.3 per cent., Romney Marsh were much the same at 36.7 per cent., and Merinos had risen to 24.9 per cent.

A rough survey of wool production in 1928 and 1932-1938 gives the estimated production of greasy wool in millions of kilogrammes as follows:

1928	55
1932	50
1933	42
1934	51
1935	50
1936	52
1937	50
1938	52

Clipping takes place from September to November, whilst exports generally last till February. The home consumption is almost insignificant, even though it has doubled in the last ten years from 1.2 million kilogrammes in 1928 to 2.5 in 1938. Hence in order to dispose of its wool Uruguay is wholly dependent on exports, and wool indeed constitutes 40 per cent. by value of the total exports in normal years, although the annual variations may be considerable.

The main customers for Uruguay's wool till 1935 were the United Kingdom, Germany, Italy and France, which latter country also takes many unclipped skins. The U. S. A. and Japan, which previously had bought only in small quantities, suddenly in 1936-37 appeared on the market with such considerable purchases that the United States took first place among the buyers, followed by the United Kingdom, Germany

⁽¹⁾ *Diario Oficial*, No. 9643, October 21, 1938.

⁽²⁾ *Diario Oficial*, No. 9650, October 29, 1938.

and Japan. However, in the very next year, 1937-38, the situation changed again, the purchases of the U. S. A. and Japan fell considerably, those of the United Kingdom fell a little as compared with the previous year, whereas Germany, because of its increasing wool imports, took in 35,943 bales ⁽¹⁾, as against 18,813 bales in 1936-37, and thus moved to first place among the importers of Uruguay wool.

This was all the more welcome as 1937-38 was one of the worst wool years that Uruguay had had for a long time. Whereas in 1936-37 120,054 bales had been sold at reasonable prices—partly to supply the arming states with material for uniforms—in 1937-38 exports only amounted to 91,431 bales, and prices which in January 1937 had varied according to quality between 5.0 and 12.50 pesos per 10 kilogrammes in January, 1938 had fallen to between, 3.40 and 7.50 pesos for the same qualities. On September 30, 1938, at the beginning of the new season, Uruguay still had a carry-over of 9,457,327 kilogrammes, and to this came the new clip of about 55 million kilogrammes. To dispose of so great a quantity was naturally no easy matter. In March 1939 in the Union of South Africa, Argentina and Australia the greater part of the clip was for sale, the better quality part of it already sold, and the stocks were almost everywhere much lower than in the same month of the previous year; but in Uruguay only about half the wool stocks had been sold. Selling conditions were certainly better than in 1937-38, for by May 31, 1939 16,000 more bales had been sold than by the same date in the previous year, but even so in April 1939 the Montevideo market was the only one on which considerable quantities of the current clip were still unsold. Admittedly this was partly due to the producers demanding prices 10 to 15 per cent. above the world market prices, and at which they could only sell to countries with clearing agreements according to the law of November 9, 1934. Therefore by a decree of March 16, 1939 ⁽²⁾ the Government introduced subsidies on wool exports, hoping by this means both to help the wool exporters and to bring free exchange into the country. Export subsidies will be paid on a maximum of 15 million kilogrammes to exporters who promise to hand over the free foreign exchange received in payment for wool exports to the *Banco de la República*: the amount of the subsidy is not stated in the decree, but in practice it seems to amount to about 10 per cent. of the usual wool prices. Originally the subsidies were to be paid only on exports effected in the three months following the passing of the decree, but owing to the good results of the measure the validity of the decree was extended by a further decree of June 17, 1939 ⁽³⁾ till July 16. The foreign exchange coming in through these subsidised wool exports is used for the purchase of fuels and raw materials and similar goods in the markets, whilst any profits on these exchange dealings are used for the furthering of arable and animal farming.

In view of the difficulties in the way of the disposal of natural wool, Uruguay, like the other great wool-producing countries, naturally follows with concern the increasing production of artificial wool, especially in Germany, Italy and Japan and its employment in other wool-using countries. A decree of July 21, 1938 ⁽⁴⁾ set up a committee of representatives of the ministries and producers concerned and entrusted it with the study of the situation resulting from the production of artificial

⁽¹⁾ 1 bale = 420 kilogrammes.

⁽²⁾ *Diario Oficial*, No. 9770, March 24, 1939.

⁽³⁾ *Diario Oficial*, No. 9840, June 23, 1939.

⁽⁴⁾ *Diario Oficial*, No. 9585, August 12, 1938.

textiles and the elaboration of proposals for the protection of the native wool production in markets both at home and abroad.

A law of November 10, 1938 ⁽¹⁾ contains rules for the use of the name "wool" and provides measures for the fight against wool substitutes. In accordance with the decisions of the International Wool Conference of June 1938 the name "pure wool" is only allowed to material containing not more than 3 per cent. of other materials.

Pigs. — The pig production of Uruguay, although as yet inconsiderable seems capable of further development. However, for this an increase in domestic consumption would be necessary—the home consumption is only 2.5 kilogrammes per head per annum—and also production would have to be diverted from fat pigs to the meat pigs preferred by foreign markets. Accordig to the live-stock census of 1937 the pig population then amounted to 307,924. In 1936 49,051 kilogrammes of chilled pork worth 11,941 pesos and 130,860 kilogrammes of salted pork worth 29,220 pesos were exported. A decree of June 14, 1939 ⁽²⁾ is also intended to further pig farming, by making compulsory the adoption of measures against swine fever.

TABLE II. — *Areas under the principal Crops in Uruguay.*

(Thousand hectares)

Crop	1933-34	1934-35	1935-36	1936-37	1937-38
Total arable area	1,239.2	1,228.2	1,304.6	1,144.1	1,500.0
Areas under					
Wheat	481.0	444.6	512.7	398.9	556.4
Oats	86.2	78.1	83.2	72.6	89.6
Sesamum	2.4	1.1	2.1	3.1	9.1
Maize	205.5	230.1	242.8	215.8	217.6
Ground-nut	1.2	1.3	1.2	1.5	1.6
Potatoes	7.4	8.4	7.6	6.9	4.7
Flax	105.0	162.1	125.7	144.1	134.3
Barley	6.2	9.4	13.6	11.4	12.4
Lucerne	3.5	4.2	4.3	4.5	3.2
American peas (<i>poroto</i>)	7.1	8.6	8.4	8.4	10.1
Manioc	8.6	8.6	9.6	8.7	9.6

Arable farming.

Uruguay has a total area of 186,926 square kilometres, of which generally 60 per cent. are reckoned as meadows and pastures, 7.5 per cent. as arable in the strictest sense of that term, 20 per cent. as mixed arable and pasture, about 3 per cent., as forest and 9.5 per cent. as waste. During recent years the proportion of arable

⁽¹⁾ *Diario Oficial*, No. 9670, November 23, 1938.

⁽²⁾ *Diario Oficial*, No. 9848, July 3, 1939.

has been declining still further, and despite the efforts made to further arable farming, the tendency is on the whole towards a decrease (1933-34: 6.63 per cent.; 1934-35: 6.57 per cent.; 1935-36: 6.98 per cent.; 1936-37: 6.12 per cent.).

The average density of population of Uruguay is most often given as 11.2 inhabitants per square kilometre, but this simple figure given by itself is deceptive, because it does not allow for the fact that the greater part of the population live crowded together in the capital, Montevideo. The country itself is indeed under-populated, and yet there is a pronounced rural exodus. This circumstance is also reflected in the immigration regulations which favour farmers and peasants with families from the agriculturally advanced countries.

As can be seen from Table I showing the composition of Uruguay's exports, arable products are of little importance compared with live-stock products in Uruguay's export trade. From a purely international standpoint it would indeed suffice in this connection to mention linseed, wheat, wheat flour and food pastes. We shall nevertheless proceed to consider a number of products, most of which do not seem to play an important part in the Uruguay economy, at least not as regards their quantity; and we shall do so not only because of their possible importance in the home market, but also because in the attempts to attain self-sufficiency they may prove able at least to reduce the dependence on imports as regards certain agricultural products—*e. g.*, oil-yielding seeds and plants—and for this reason alone may become important for countries trading with Uruguay. If production is still further increased they may even come to figure in the export trade, as sometimes happens in the cases of rice and maize.

The relative importance of the various types of cultivation is shown by Table II, in which are given the percentages of the total area under the more important crops for the years 1933-34 to 1937-38.

Wheat. — In 1937 and 1938 respectively 38,081 and 44,520 metric tons of wheat were exported, but in spite of the increase in the volume of exports the value of the wheat exported in 1938 was only 62.6 per cent. of what it had been in the previous year, owing to the fall in wheat prices in the world market. The harvest of 1937-38 had amounted to 451,003 metric tons, and the 1938-39 harvest also promised to be an abundant one, but the home consumption amounts only to about 225,000 metric tons per annum, so that the Government had repeatedly to intervene in order to regulate sales and to maintain prices. A law of December 15, 1938 ⁽¹⁾ permitted the free export of the total exportable wheat surplus of the 1938-39 harvest and fixed minimum prices for wheat till November 30, 1939. At the beginning of 1939 supply actually exceeded demand considerably on the home market. Consequently a decree of February 2, 1939 ⁽²⁾ permitted the export of 7,000 metric tons of wheat flour of the 1938-39 harvest. In addition the *Banco de la República* was commissioned to buy 15,000 metric tons of wheat by a decree of March 3, 1939 ⁽³⁾, and another 35,000 tons in May, whereupon the market situation improved. Nevertheless by a decree of June 7 1939 ⁽⁴⁾, the Bank was once more empowered to buy another 20,000 tons.

(1) *Diario Oficial*, No. 9699, December 28, 1938.

(2) *Diario Oficial*, No. 9736, February 10, 1939.

(3) *Diario Oficial*, No. 9762, March 15, 1939.

(4) *Diario Oficial*, No. 9839, June 22, 1939.

In order to facilitate the disposal of cereals in general, a decree of February 9, 1938 ⁽¹⁾ set up a committee to study the situation, type and capacity of any silos possibly to be built in the future in relation to the local conditions of the different zones of cultivation.

Maize. — The soil of Uruguay is specially suited for the cultivation of maize, and the area under this crop could indeed still be considerably extended despite the locusts and the drought. As it is, however, the harvest is generally insufficient to cover the home demand, although in an exceptional year a specially good harvest may even render possible a certain export of maize, as has been the case in 1939 when a decree of May 10, 1939 ⁽²⁾ authorised the export of 10,000 tons of maize.

Oats, barley, rye. — These crops are mainly of local importance. Oats are cultivated for the production of oat flakes, but principally as a winter fodder; barley to an increasing degree for winter green-feed purposes and as a fodder for farms devoted to the fattening of pigs and the tending of milch cows. The area under rye is insignificant.

Rice. — Rice cultivation, on the other hand, is of increasing importance. In 1929-30 the area under rice amounted only to 400 hectares. Originally the rice was planted in the eastern parts of the Republic where water is plentiful, and the crop often exceeded 3,000 kilogrammes per hectare. But now rice is also to be found in other parts of the country, wherever water supplies are sufficiently abundant. The total area under rice in 1938 was 6,632 hectares with a production of 24,287 metric tons. The home consumption is at present fully covered. In good years, rice both husked and unhusked is exported. A surplus production is expected for 1939.

Oilseeds. — In 1938 72,326 metric tons of linseed worth 5,098,066 pesos were exported, as against 74,067 tons worth 4,572,121 pesos in the preceding year. The harvest and consequently also the amounts available for export are subject to great fluctuations.

For some time there has been a marked tendency in Uruguay to encourage the production of oil-seeds and plants for processing within the national territory itself. The object is thus to render the country independent of the considerable imports of food oil, which about 1935 amounted to about 8 million litres annually valued at about 5 million pesos. Consequently linseed oil which before only served industrial purposes is now also used as a food oil.

Strong encouragement is also being given to the cultivation of sun-flowers, groundnuts, colza, rape and also soyabeans, which last-mentioned are admittedly more difficult to acclimatize in Uruguay, but have given good results in experiments carried out on the well-known plant-research and seed testing station La Estanzuela. Groundnuts and sun-flower seeds are among the seeds which farmers may receive as seed-loans, and the repayment of these loans is also sometimes made in the form of seeds ⁽³⁾. The home production does not, however, yet cover the home demands,

⁽¹⁾ *Diario Oficial*, No. 9446, February 21, 1938.

⁽²⁾ *Diario Oficial*, No. 9820, May 31, 1939.

⁽³⁾ These loans have been granted since 1937. The interest charges are paid sometimes in seeds and sometimes in money. A law of May 10, 1937 introduced these loans for wheat, linseed and maize. In 1938 seed-loans of the same type were granted as regards ground-nuts and sun-flower seeds. A similar law was passed again in 1939 (*Diario Oficial*, No. 9794, April 28, 1939).

and oil-seeds may be imported free of duty when the home crop has been disposed of at good prices (decree of July 14, 1938 ⁽¹⁾).

Olive trees. — In 1937 there were already in Uruguay 875 hectares under olive trees, but the olive tree has not yet become properly established in the country because the high labour costs leave only an insufficient profit. Climatic conditions would be altogether favourable to this form of cultivation, and it is hoped that the law of December 15, 1937 ⁽²⁾ will encourage it. Under this law new olive tree plantations are exempt from all taxation for the next fifteen years. The best kept olive groves will be awarded premiums. Farmers may receive plants gratis, and similarly advice is given free of charge on all matters in connection with their planting and cultivation.

Textile fibres. — Formerly flax was cultivated in Uruguay exclusively in order to obtain linseed. But in view of the decline in the Russian flax exports, which is not adequately counter-balanced by the increase in the flax production of the other eight flax-producing countries, Uruguay is considering the possibilities of cultivating flax also for the sake of the textile fibres. The attempts at flax cultivation initiated in 1930 at La Estanzuela have given excellent results.

Since 1919 attempts have also been made to grow cotton of the Upland varieties in North Uruguay, and these attempts have proved very satisfactory. However, only a small scale cultivation for home consumption is under consideration, a cultivation of some 2 to 3 hectares per family farm of land that would otherwise be devoted to maize.

Fodder production. — Uruguay has excellent natural pastures, but in addition wheat, oats, barley and also lucerne are cultivated for fodder purposes, although lucerne does not grow as well in Uruguay as in neighbouring Argentina. The cultivation of Sudan grass has shown a considerable increase. The studies on the best fodder composition and the possibilities of cultivating the various fodder plants are carried out according to a plan of work laid down by a Committee on Meadows and Pastures appointed in 1935 by the Ministry for Agriculture. A governmental decision of September 29, 1938 ⁽³⁾ provided 6,000 pesos for the further work of this committee and especially for the studies on soil science undertaken by it.

Fruit and vine cultivation. — Uruguay produces excellent fruit: oranges, tangerines, lemons, grape fruit, pears, apples, peaches figs and grapes. The number of fruit trees is estimated at 6 million, of which 3.5 and 1.5 million are peach and orange trees respectively. An increase in the output of citrus fruits, which do well throughout the country, depends on the successful combatting of plant diseases. The fruit has as yet mainly been exported to the neighbouring countries, whereas the lemons went overseas. Prospects of an increased export of fruit, especially of high-quality oranges and tangerines, are offered by the fruit transport service opened this year between the French and Belgian ports and Buenos Aires and Montevideo. A decree of June 24, 1939 ⁽⁴⁾ regulates in every detail the packing and sale of home-grown fruit and provides for their careful grading.

⁽¹⁾ *Diario Oficial*, No. 9573, July 29, 1938.

⁽²⁾ *Diario Oficial*, No. 9411, January 11, 1938.

⁽³⁾ *Diario Oficial*, No. 9636, October 13, 1938.

⁽⁴⁾ *Diario Oficial*, No. 9841, June 24, 1939.

The vineyards of Uruguay are all in or near the province of Montevideo. The area under vine amounts to 12,000 hectares and the annual wine production to about 59 million litres. Wine production indeed exceeds demand, and measures are being taken to restrict cultivation by the decree of March 11, 1938 ⁽¹⁾. A part of the surplus wine is bought by the National Fuel Administration (called Ancap from the initials of its Spanish name) in order to burn it to alcohol.

A. LENZ

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⁽¹⁾ *Diario Oficial*, No. 9468, March 21, 1938.

(*) *List of abbreviations*: bihebd. (biweekly); bimens. (twice monthly); bimestr. (every two months); déc. (every ten days); étr. (foreign price); fasc. (copy); hebd. (weekly); int. (home price); irr. (irregular); mens. (monthly); n° (number); N. S. (new series); p. a. (per annum); q. (daily); sem. (half yearly); s. (series); trihebd. (every three weeks); v. (volume); trim. (quarterly).

N. B. — Between brackets [/] are given translations and explanatory notes not appearing in the title of the review.

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TRADE RELATIONS OF THE U. S. S. R. WITH WORLD AGRICULTURAL MARKETS (*Conclusion*) ⁽¹⁾.

SUMMARY:— Forest resources of the U. S. S. R. — Forest zones of the U. S. S. R. — Timber exports in the last twenty years in comparison to pre-War times. — Different types of timber exported by the U. S. S. R. — Russia's timber exports considered in relation to those of the other principal exporting countries and as a part of world exports. — Export quotas for sawn timber. — Forest policy and exports. — Wood consumption within the U. S. S. R. — Russian timber markets before and after the War. — General tendencies and prospects of Russian timber exports.

III. — International trade in forest products.

Forest resources of the U. S. S. R.

In the first part of the present study in the April number of this *Bulletin* (pp. 156-157) reference was already made to the great importance which timber exports now possess in Russia's foreign trade. The share of timber exports relative to Russia's total exports has risen in value from 12.3 per cent. in 1913 to 25 per cent. in 1937. Hence timber is now the most important Russian export commodity and to an even greater degree than was wheat before the War, for wheat only accounted for 22 per cent. of the exports of the territories of the present-day U. R. S. R.

This great timber trade is based on the almost inexhaustible forests of the U. S. S. R. According to the *Great Soviet Encyclopedia* (Vol. XXXVI, 1938, p. 632) the total forest area amounts to 956 million hectares, that is to say, about one third of the world's forest area, and 43 per cent. of the total area of the U. S. S. R. If, however, we consider only the forests in the more limited sense of the word, the forests which are reasonably easy of access cover 622 million hectares, whilst the area actually being exploited amounts to 484 million hectares, or one sixth of the world's total forest area. Certainly some countries such as Finland, Sweden and Japan have an even greater proportion of the national territory under forest, but in absolute figures Russia's forest area remains the most extensive in the world.

⁽¹⁾ The first and second parts of this study appeared under the headings "General features of the foreign trade of the U. S. S. R." (April 1939) and "International trade in agricultural products" (May 1939) respectively. The present third part is appearing after a period of several months, during which time it was possible to collect more complete information on the subject here treated.

Much the greater part of the forest area is to be found in the Asiatic territories of the U. S. S. R., only 27 per cent. of the forests being in the European territories, as against 73 per cent. in the Asiatic territories of the U. S. S. R.

Forest zones of the U. S. S. R.

From the standpoint of the wealth of their forest resources the territories comprised within the U. S. S. R. may be divided into four main zones:

(a) The wood surplus zone. Under this heading are included the Northern Province (Archangel, Vologda), the Karelian Republic, Gorki Province, the West Siberian Territory, the East Siberian Province and the White Russian Republic. All these regions not only have enough wood to satisfy their own needs, but are also the main sources of supply for the other territories of the Union as also for the export trade.

(b) The second zone is composed of areas which are self-sufficing in wood, such as Leningrad Province and the Far East Territory, where the production and consumption of wood roughly balance. However, the old industrial area of Leningrad draws part of its wood supplies from Karelia and the Northern Province whilst at the same time exporting a part of its unworked round wood.

(c) The third zone is composed of areas where the local supply is insufficient both for domestic use and for the economic life of the area, so that recourse must be had to the wood surplus of other areas of the Soviet Union. Under this heading come Moscow Province, Kursk Province, Voronezh Province, the Ukraine and the various Transcaucasian republics, which areas together receive, on the average, an import of 35 million cubic metres of wood — that is to say, 75 per cent. of their wood consumption and 83.4 per cent. of the exports of the surplus zone.

(d) Finally there is the fourth zone which is almost without forests and is represented by the Provinces of Saratow, Stalingrad, Orenburg, the Crimea Republic, Kirghizia and the republics of Central Asia. These areas are themselves able to satisfy only about 5 per cent. of their wood requirements, 95 per cent. of their requirements being met by imports from the zones better provided with forests.

Table XX gives the production, trade and consumption in each of these zones of that portion of the timber production of the U. S. S. R. which is utilized for industrial purposes within the territories of the Union itself.

The interzonal wood export comes almost exclusively from the wood surplus zone, only 52.1 per cent. of the wood output of this zone being utilised industrially within its area of production. The third zone has the highest import considered in absolute figures, although relative to total wood consumed the wood imports of the third zone (75.0 per cent.) are less than those of the fourth zone (94.8 per cent.). The highest absolute wood consumption is thus to be found in the third zone, which includes the greatest industrial area of the whole Soviet Union but which is also almost the poorest as regards forests.

It should, however, here be noted that the boundaries of the administrative areas do not entirely coincide with those of the forest areas, and that hence in

TABLE XX. — *Production, Trade and Consumption
of Timber used within the U. S. S. R. (a)*
(according to the plan for the year 1936)

Zone	Production	Consumption	Surplus	Import	Surplus	Import
	(Thousand cubic metres)				(Percentage of production)	
(a) areas of wood surplus . .	87,531	45,847	41,992	308	47.9	0.3
(b) self-sufficient areas (except the Far Eastern territories)	8,764	8,763	1	—	0.01	—
					(Percentage of consumption)	
(c) areas poor in forest . . .	11,595	46,383	—	34,788	—	75.0
(d) areas without forest . .	378	7,275	—	6,897	—	94.8
Total . . .	108,268	108,268	41,993	41,993	—	—

(a) From *The Forest Industry* (in Russian), 1936, No. 8, Moscow, p. 37.

practice it may happen that some wood is exported even from areas poor in forest. Thus, for example, much sawn timber is exported from the Saratow and Stalingrad Provinces on the middle Volga, these two provinces exporting 70 and 30 per cent. respectively of their sawn timber, because the transport facilities offered by the Volga have resulted in many saw mills being erected on its banks.

Then also it should be remembered that in some territories the wood surpluses or wood deficits do not apply to all varieties of wood. Thus, for example, valuable hard woods are exported from the Ukraine, an area poor in wood, and similarly fine woods such as walnut and beech are provided by the Caucasian territories.

This geographical classification of the territories of the U. S. S. R. into economic zones according to the wealth or poverty of their timber resources can, indeed, do no more than indicate the general character of any territory in this respect. It cannot refer to smaller areas within these zones, especially when in such areas there is any conflict between the means of transport and the natural, economic and other factors which affect the development of forest resources.

The share of the separate republics of the U. S. S. R. in the Russian timber exports in 1930, the year in which Russia's timber exports reached their highest figure since the War, was as follows:

The great bulk of Russia's wood exports came from the R. S. F. S. R. (Russian Soviet Federated Socialist Republic), which is indeed by far the biggest republic of the Soviet Union and includes all Asiatic Russia. Within this republic the Northern Province provided 41.2 per cent. of the total Russian wood exports, Leningrad Province 14.8 per cent., the Karelian Republic 9 per cent. (96 per cent. of the total exports of wood and wood products of this republic), Gorki

Province 7.2 per cent., Western Province 4.4. per cent., West Siberia Territory 1.8 per cent., the Far East Territory 8.7 per cent., etc.

The White Russian Republic provided 7 per cent. of the timber exports of the U. S. S. R.

Timber exports in the last twenty years in comparison with pre-War times.

The U. S. S. R. after the War resumed her timber exports even earlier than her wheat exports. The grain exports could not be resumed before 1924, not only because the Ukraine, the granary of the Soviet Union, was cut off from the rest of the Soviet Union till 1920 by civil war, but also because the consequences of the terrible famine year of 1921 continued to make themselves felt in the succeeding years.

For its timber exports, however, the U. S. S. R. had to have recourse to quite a different part of the country, for the forests of Russia are situated not in the south but in the great northern and eastern territories of the Union. Timber exports began, although admittedly on a small scale, as early as 1920, so that in the fiscal year 1921-22 24.8 million poods ⁽¹⁾ were exported as against 270 million poods in 1913 from Russia within its present boundaries — the exports of Russia within its pre-War boundaries amounted to 464 million poods.

The development of Russia's timber exports from 1922 till 1938 in comparison with pre-War times is shown by the following table:

TABLE XXI. — *Timber Exports of the U. S. S. R.: 1913 and 1922-38 (a)*

Year	Cubic metres
1913 (within the present boundaries of the U. S. S. R.) . .	10,358,000
1922	1,005,000
1923	2,171,000
1924	3,371,000
1925	3,704,000
1926	3,147,000
1927	4,295,000
1928	5,486,000
1929	8,840,000
1930	12,198,000
1931	10,493,000
1932	10,300,500
1933	10,582,893
1934	10,845,958
1935	11,867,227
1936	10,572,364
1937	8,596,262
1938	5,320,919

(a) Sources: *Timber Exports from the U. S. S. R.* (in Russian), Moscow, 1932, p. 9 — *The Great Soviet Encyclopedia* (in Russian), Moscow, 1938 — *The Forest Industry* (monthly review in Russian), 1933-1938, Moscow — *The International Yearbook of Forestry Statistics 1933-1935*, I. I. A., Rome — *Annuaire du Commerce Mondial du Bois*, Comité International du Bois, Vienna and Brussels, 1935-1938.

It should be noted that the statistics for Russian wood exports do not always agree, especially those for recent years. The differences are in part due to the difficulties of reducing the different units of measurement in use to one common standard.

(¹) 1 pood = 16.380 kilogrammes.
= 36.113 pounds.

As this table shows, Russia's timber exports in contrast to her wheat exports showed a progressive increase each year till 1930. In 1924 the timber exports were already one third of their pre-War volume, by 1928 they had risen to over half the 1913 figure, whilst in 1930 nearly two million cubic metres more were exported than in 1913.

After 1930 there was a decline in timber exports in the worst crisis years, 1931-33, during which exports remained roughly at their pre-War level, fluctuating round about 10 million cubic metres. In the two following years 1934 and 1935 there was again an increase in the Russian timber exports, but this increase was in part only of a statistical nature, because in 1934 the conversion factors for pulp-wood and for pit-wood were somewhat raised, which naturally made the total exports appear greater ⁽¹⁾. In the last three years, 1936-38, timber exports have shown a fairly strong tendency to decline, so that in 1938, according to the provisional figures available, exports only reached about half their pre-War volume.

The causes of this decline, which are partly to be found in the more recent developments of the Russian economy and partly in the present state of the international timber markets, will be considered later in this article.

TABLE XXII. — *Timber Exports relative to Annual New Growth in the principal Exporting Countries.*

Country	Forest area (million hec- tares)	Percentage of world's forests	Annual new growth (million cubic metres)	Exports in 1932 (thousand cubic metres)	Exports as a percentage of annual new growth
U. S. S. R.	956	31.4	600	10,300	1.7
U. S. A.	190	7.1	200	3,840	1.9
Finland	25.3	0.8	43	5,238	12.2
Sweden	23.5	0.8	48.9	4,025	8.2
Poland	8.8	0.3	21	1,740	8.3
Yugoslavia	7.6	0.3	19.5	1,500	7.7
Norway	6.9	0.2	9.1	347	3.8

As can be seen from Table XXII the forest area of the U. S. S. R. amounts to almost one third of the total forest areas of the world, and the annual new growth of 600 million cubic metres is about double the annual new growth of the six other countries put together. Yet the U. S. S. R. timber exports amount to no more than 1.7 per cent. of the annual new growth, whereas in the U. S. A. they amount to nearly 2 per cent., in Norway to 3.8 per cent., in Yugoslavia to 7.7 per cent., in Sweden to 8.2 per cent., in Poland to 8.3 per cent., whilst in Finland they reach 12.2 per cent. Thus Russia's wood exports are apparently far inferior to the economic possibilities offered by the country's inexhaustible wealth in forest land.

⁽¹⁾ *Annuaire du Commerce Mondial du Bois*, Comité International du Bois, 1936, p. 11.

Different types of timber exported by the U. S. S. R.

In order adequately to describe Russia's timber exports we must examine them not only from the quantitative but also from the qualitative standpoint, that is to say we must consider the different types of wood exported and also the change which has taken place in the composition of the wood exports during the last 25 years.

Unfortunately, however, it must once again be emphasised that the various statistics often differ considerably from one another, and that hence we must content ourselves with more or less reliable estimates rather than absolutely exact statistics. The *International Year Book of Forestry Statistics 1933-35*, Vol. I, Europe and U. S. S. R., p. IX (International Institute of Agriculture, Rome, 1936) remarks on this point "The forestry statistics now compiled differ in kind from one country to another while their accuracy varies considerably. Moreover the terminology employed in the various countries is not uniform and not always clear".

Subject to this limitation, it does, however, remain possible to compare the composition of Russia's timber exports in its general features and tendencies with the exports both of the world as a whole and of the chief exporting countries.

TABLE XXIII. — *Composition of Russian Timber Exports in 1913 and during the Second Five Year Plan.*

(Percentages of total volume of exports for the year)

Type of wood	1913	1932	1938
Unworked timber	—	—	—
Round timber	12.4	10.6	4.5
Pit-props (pit-wood)	15.8	10.8	17.5
Pulp-wood	16.8	22.9	15.0
Sleepers	0.6	1.5	2.0
Other types of wood	1.8	1.1	—
Total . . .	47.4	46.9	39.0
Worked timber	—	—	—
Sawn timber	46.9	47.3	59.0
Other types of timber	5.7	5.8	2.0
Total . . .	52.6	53.1	61.0

As may be seen from Table XXIII, since the War the composition of the wood exports has undergone a change in favour of worked timber. In 1913, unworked and worked timber represented 47.4 and 52.6 per cent. respectively of the total wood exports. By 1932 the proportion of worked timber began to show a slight increase, which by 1938 had become so considerable that less than two

fifths of the exports consisted of unworked wood. A similar development had already taken place in the other principal timber-exporting countries of Europe such as Finland, Sweden, etc., the timber exports of which have to an ever increasing degree been coming on to world markets in worked form, either as sawn wood, or as chemically treated wood, as wood-pulp or as cellulose.

Sawn timber. — Now as before the War sawn timber constitutes the single largest item in the Russian timber exports. In 1913 sawn timber constituted 46.9 per cent. by volume of the timber exports of the present territories of the U. S. S. R., which figure had risen to 54.3 per cent. in 1929 and was 49.0 and 59.0 per cent. for 1937 and 1938 respectively, that is to say an increase of 12 per cent. in the last 25 years. Reckoned by value the share of sawn wood in Russia's timber exports has been even greater, having amounted to 63 per cent. in 1933 and to 71 per cent. in 1937. Thus the share of sawn timber in Russia's timber exports is much the same as in the world timber exports in general, which in 1937 was 53.5 per cent. by volume and 74 per cent. by value.

On the world markets for sawn timber, in 1933 the U. S. S. R. was the chief source of supply and provided 20 per cent. by volume of world exports, as against 18 per cent. provided by Finland, 17 per cent. by Sweden, 9 per cent. by Canada etc.

1938, however, saw a change in the importance of these four principal exporting countries. Canada rose to first place, her exports amounting to 21 per cent. of world exports. Finland kept the second place, having even increased her share of world exports by 0.5 per cent. The U. S. S. R. on the other hand fell from the first place it occupied in 1933 to third place with a participation in world trade of 15.5 per cent. Sweden also fell from third to fourth place during this period, providing 14.5 per cent. of the world exports of sawn timber. Thus in 1938 these four countries together provided 69.5 per cent. of the world exports of this type of wood.

Especially striking is, of course, the great expansion of Canadian exports, which almost doubled in six years, rising from 2.4 million cubic metres in 1933 to 4.2 million cubic metres in 1938.

The fifth most important exporting country of sawn timber is the U. S. A., whose exports, however, have somewhat declined both absolutely and relatively, her share of world exports having fallen from 10 per cent. in 1933 to 8.5 per cent. in 1938.

Thus we see that of these five countries it has been the U. S. S. R. whose exports suffered the greatest decline from 4,670,000 cubic metres in 1933 to 3,173,000 in 1938. Over the same period world exports of this type of wood fell from 24 to 20 million cubic metres ⁽¹⁾.

Russia's exports of sawn timber have fallen considerably also in relation to her production of sawn timber — which is almost double what it was before the War — from 42.7 per cent. in 1913 to 14.5 per cent. in 1936, the corresponding percentages for Sweden and Finland being 65 and 95 per cent. respectively. The

⁽¹⁾ *The Forest Industry* (in Russian) No. 9, Moscow, 1936 and *Annuaire du Commerce Mondial du Bois*, 1935-1938, Comité International du Bois.

export of sawn timber relative to Russia's total wood production does not now exceed 6 per cent., whereas in Sweden the corresponding figure is 23 per cent., in Estonia and Latvia 26 per cent. each, in Finland 26 per cent., in Yugoslavia 27 per cent., in Poland 30 per cent.

Pulp-wood. The second place in Russia's timber exports is occupied by pulp-wood, which in 1913 provided 16.8 per cent. of the wood exports of Russia within her present frontiers, the figure rising to 27 per cent. in 1936 and then falling back to 15 per cent. in 1938. Considered in absolute figures the decline in the exports of pulp-wood has been very considerable during the last years, from 3.3 million cubic metres in 1935 to 1.8 million in 1937 and 0.8 million cubic metres in 1938. As regards the world exports of pulp-wood, in 1934 Russia easily occupied first place with a share of 35 per cent. as against Canada's 24 per cent., Czechoslovakia's 10.0 per cent., Poland's 7.5 per cent., Austria's 4 per cent., Latvia's 3 per cent., Lithuania's 2 per cent. and Sweden's 1 per cent.

Here again, however, the 1938 figures showed changes to have taken place. The share of world exports of pulp-wood coming from the U. S. S. R. was now only 10.5 per cent. and that of Finland 11.5 per cent. On the other hand Canada in 1938 provided 52.5 per cent. of the world exports of pulp-wood, Latvia 4 per cent. and Sweden 3 per cent. The decline of Russian pulp-wood exports, despite the great wealth of the Russian forests in pine (the principal tree for the production of pulp-wood), was indeed the main factor behind the great decline in the world export of pulp-wood.

The reason for the fall in the pulp-wood exports is certainly to be found in the desire of the U. S. S. R. to reduce as far as possible the exports of this raw material in order to be able to develop the home paper-making industry. Sweden, Finland, etc. also prefer to export the processed forms of pulp-wood such as cellulose, mechanical and chemical wood pulp, etc. rather than pulp-wood itself, the export of which is less profitable. The proceeds from the sale of cellulose, for example, are twice as great as those from the sale of the pulp-wood needed for the production of the cellulose. The unprofitableness of the export of pulp-wood thus becomes evident, but the processing of this wood requires the creation of ever greater industrial installations in order both fully to cover the increased Russian demand for paper and to expand the exports of processed wood. This is one of the main problems in the economic development of the U. S. S. R.

Pit-wood. — Before the War in 1913 the third place in Russia's wood exports was taken by the pit-wood exports, which accounted for 15.8 per cent. by volume and 7.4 per cent. by value of the total. In 1938 pit-wood exports had risen to represent 17.5 per cent. by volume of the wood exports of the U. S. S. R., as compared with the corresponding figures of 7 per cent. for Sweden, 23.0 per cent. for Finland, 12.5 per cent. for Latvia and 14.5 per cent. for Poland. As regards the world exports of pit-wood, which amounted to 3.8 million cubic metres in 1938, Finland easily holds the first place contributing 43 per cent. of the total, followed by the U. S. S. R. and Poland contributing 25 and 11 per cent. respectively.

Round Coniferous Wood. — Before the War the exports of this type of unworked wood constituted 12.4 per cent. of the total Russian wood exports,

which figure in 1938 had fallen to 4.5 per cent. In absolute figures exports in 1938 amounted to 466,170 cubic metres. In the world markets for this type of wood Canada took first place with exports something over a million cubic metres, representing 23 per cent. of world exports. Austria occupied the second place and then came the U. S. S. R., providing 18.5 and 15.5 per cent. respectively of the world exports.

However, certain other countries are also relatively important exporters of this type of wood and compete with the U. S. S. R. on world markets. Such are Czechoslovakia almost a quarter of whose timber exports were of this type, Poland and Yugoslavia each with a corresponding proportion of 11.5 per cent., France with 14.5 per cent., Latvia with 5.5 per cent., and Finland and Sweden each with 2 per cent. Relative to total timber exports the proportion of exports of this type of wood was highest in Czechoslovakia and Austria, in both of which countries it reached about 25 per cent., whilst the lowest proportions are to be found in Finland and Sweden. For the U. S. S. R. the corresponding proportions were 7.5 and 4.5 per cent. in 1937 and 1938 respectively, so that the Soviet Union in this respect stands nearer to Finland and Sweden than to the former Czechoslovakia and Austria. Also the exports of the U. S. S. R. have shown a steady tendency to decline, which may partly be attributed to the prevailing policy of favouring an increase of the proportion of worked timber among the timber exports. The increase in the percentage of sawn timber and the simultaneous decrease in the percentage of round timber in Russia's wood exports is, as already mentioned, one of the most marked features of Russia's post-War timber exports.

Ply-wood. — Before the Revolution no ply-wood was exported. In recent years, however, exports have risen considerably relative to production, having reached a percentage of 30.7 in 1929, rising to 34.4 per cent. in 1932 but falling to 27.7 per cent. in 1936. In absolute figures exports fell from 172,300 cubic metres in 1934 to 107,000 cubic metres in 1938. This type of wood constitutes between 1 and 2 per cent. of Russia's total wood exports.

In world trade the U. S. S. R. and Finland stand together as easily the chief exporters of this type of wood. Russia's share in world exports amounted to 29 per cent. in 1936, to 23 per cent. in 1937, and to 19.5 per cent. in 1938, Finland's share in the last mentioned year having been 38 per cent. Hence in 1938 the U. S. S. R. and Finland together provided over 57 per cent. of the world's exports of this type of wood. Poland came next in importance with 18.5 per cent. of world exports, Latvia with 15 per cent., Estonia with 4 per cent., Sweden with 2.5 per cent., etc. Total world exports of ply-wood in 1938 amounted to 545,531 cubic metres.

The timber exports of the U. S. S. R. considered in relation to those of the other principal exporting countries and as a part of world exports.

Having thus examined Russia's timber exports from both the quantitative and qualitative standpoints we may now pass on to consider the position of Russia relative to those of the other chief timber exporting countries in world markets and the changes in these relative positions during recent years. The

necessary information is most clearly shown in the form of the following table which is compiled from data supplied by the *Comité International du Bois*:

TABLE XXIV. — *Timber Exports of the principal Exporting Countries.*

Country	1934		1938	
	Cubic metres	Percentage of world exports	Cubic metres	Percentage of world exports
World	52,633,469 (100)	—	40,231,097 (76.43)	—
U. S. S. R.	10,845,958 (100)	20.61	5,320,919 (49.06)	13.2
Finland	8,597,732 (100)	16.34	6,983,842 (81.22)	17.4
Canada	7,101,418 (100)	13.49	10,063,924 (141.71)	25.0
Sweden	4,976,120 (100)	9.45	3,974,896 (79.88)	9.9
U. S. A.	4,422,356 (100)	8.40	2,895,308 (65.47)	7.2
Poland	3,534,449 (100)	6.72	2,827,643 (80.00)	7.0
Czechoslovakia	2,690,439 (100)	5.11	1,844,610 (68.56)	4.6
Austria	2,263,912 (100)	4.30	938,975 (41.48)	2.3
Yugoslavia	1,685,604 (100)	3.20	1,479,333 (87.76)	3.7
Romania	1,620,291 (100)	3.08	1,695,116 (104.62)	4.2
Latvia	1,393,820 (100)	2.65	1,421,204 (101.96)	3.5
Estonia	533,585 (100)	1.01	239,744 (44.93)	0.6
Lithuania	378,375 (100)	0.72	309,753 (81.86)	0.8
Norway	258,121 (100)	0.49	235,830 (91.37)	0.6

As can be seen from Table XXIV, in absolute figures Russia's timber exports fell by over a half between 1934 and 1938, from an index number of 100 for the former year to one of 49 for the latter year. At the same time Russia's share of world exports fell from 20.6 per cent. in 1934 to 13.2 per cent. in 1938, Russia thus dropping from first to third place among the timber-exporting nations. Canada is now the world's chief exporter of timber, having in 1938 provided 25 per cent. of the total world exports, whilst Finland, despite the fact that its timber exports were nearly a fifth less in 1938 than in 1934, holds the second place with a somewhat greater share of the world's exports than in 1934.

All the other exporting countries, with the exception of Romania and Latvia whose exports have slightly increased, show a smaller wood export in 1938 than in 1934, although the extent of the decrease varies from 8.63 per cent. in Nor-

way, 12.24 per cent. in Yugoslavia and 20.12 per cent. in Sweden to 55.07 per cent. in Estonia and 58.52 per cent. in Austria.

The reduction of the share of the U. S. S. R. in world timber exports is the result of the absolute decline in wood exports from Russia; but this reduction would have been even greater had it not coincided with a considerable decrease in world wood exports, which were 23.57 per cent. lower in 1938 than they had been in 1934.

Now if it be considered that Russia's timber exports relative to her supplies and her annual new growth are smaller than in several other countries, and that also many important timber-exporting countries such as Sweden, Norway, and Canada send much of their timber on to world markets in the form of cellulose and wood-pulp, which in the case of the U. S. S. R. is rather a hope for the future than a present-day reality, then it is clear that there must be certain special causes responsible for the decline in the Russian export figures. These causes, moreover, should be analysed not only from the standpoint of wood production, but also from that of the wood consumption of the U. S. S. R. itself as also from that of the international trade in wood.

Export quotas for sawn timber.

The reduction in Russian timber exports, especially in sawn wood exports, may partly be attributed to certain general conditions prevailing on the world wood market, that is to say to the unfavourable state of trade and to the decline in timber prices during the last few years.

According to the investigations of Sentschurów⁽¹⁾ the price index of sawn wood expressed in terms of gold (1929 = 100) fell to 93 in 1930, to 81 in 1932, and to 46 in 1935, that is to say prices in 1935 were less than half of what they had been in 1929. Similarly the volume-index of world trade in sawn wood (1929 = 100) fell to 56 in 1932, to rise later to 73.5 in 1935 as a result of the steadily falling prices.

In order to re-establish more normal conditions in the timber markets the International Timber Conference which met at Copenhagen in November 1935 agreed on the European Timber Exporters' Convention, which established annual export quotas for the signatory States with the aim of maintaining prices at a reasonable level⁽²⁾. It was hoped in this way to regulate timber exports according to a pre-arranged plan, as has been done in the last few years with other important export products such as wheat, sugar and rubber. For although only 6 per cent. of the world's timber production is exported (82 million cubic metres out of an annual production of 1,560 million cubic metres in the pre-crisis years), yet wood still remains one of the most important commodities entering into world trade.

(1) SENTCHUROW, K. T.: *Economic Crises in the Capitalist Countries and the Timber Market, The Forest Industry* (in Russian) No. 11, 1938, Moscow, p. 64.

(2) ARCOLEO, F. *The Organisation of the International Timber Market, Monthly Bulletin of Agricultural Economics and Sociology*, I. I. A., Rome, February 1936.

Also from the point of view of value, among the principal products entering into world trade timber used to occupy fourth or fifth place, coming after cotton which held the first place, whilst wool and wheat (sometimes also sugar) occupied the second, third or fourth places according to the year. Hence fluctuations in the price of timber have wide repercussions. The U. S. S. R. adhered to this convention right from the beginning as did almost all the important wood-exporting countries, which together are responsible for 7/8 of the world exports of sawn timber.

This convention which has greatly helped to strengthen the market and to stabilise wood prices naturally set up quotas for the export of timber. For 1936 the convention limited the total exports of the eight signatory States (excluding Latvia) to 3,850,000 standard ⁽¹⁾, the U. S. S. R. being granted a quota of 950,000 standard. Only Finland had a quota greater than that of the U. S. S. R., about 1,000,000 standard, whilst Sweden's quota was fixed at 820,000 standard. The price index of sawn timber (1929 = 100) accordingly rose to 58 for 1936.

For the year 1937 the same quotas were maintained as for the previous year, and in general the timber markets remained calm throughout the year. According to Sentschurov the price index for sawn wood rose to 75 for 1937. The price of Russian wood on the English market reached on the average pro standard red deal, Ist. class 3×9 u/s £22.5. 0. and white deal. Ist. class 3×9 u/s £19. 0. 0. Thus compared to 1936 the prices of sawn wood were 40 per cent. higher in 1937.

Yet from October 1937 till the end of the year timber prices did again show a declining tendency, partly as a result of the appearance of Canadian supplies on the British market. To meet the new tendency the export quotas established by the convention were reduced by 10 per cent. for 1938, the share of the U. S. S. R. being fixed at 855,000 standard out of a total quota of 3,600,000 standard. These quotas were reduced by a further 10 per cent. for 1939, that is to say there was a total reduction of one fifth as against 1937.

With the general depression of 1938 there was again a decline in timber prices, the price-index falling to 58 ⁽²⁾.

Political causes such as increasing arms expenditure in some respects clearly tend to drive up the prices of timber as of other raw materials. But at the same time such political causes, owing to the uncertainty as regards the future which is necessarily associated with them, also tend to slow down the pace of economic development, to diminish the demand for wood, and hence also to reduce its price. Whereas before the War only economic factors influenced the steadily rising timber prices, now we find other factors also at work and with effects on timber prices of a contrary nature.

Hence it becomes clear that if only as a consequence of the regulation of the international sawn timber market the timber exports of the U. S. S. R. within

⁽¹⁾ A standard hundred of deals contains 120 pieces. The Petrograd standard consists of 165 cubic feet or 120 pieces, $1 \frac{1}{2}$ in. \times 11 in. \times 12 ft. or 120 pieces, 3 in. \times 11 in. \times 6 ft.

⁽²⁾ *Rapport Mensuel*, February 1939, Comité International du Bois, Brussels.

the framework of the total reduced world demand for sawn timber inevitably declined, as was also the case with the exports of the other timber-supplying countries.

Only in the light of these general market and economic factors affecting the world timber trade is it possible at least partially to explain the decline in Russian timber exports.

Forest policy and exports.

Apart from the causes connected with the European regulation of the timber market and the fixing of export quotas for the export of sawn timber there are also other causes resulting from the Russian policy with regard to the exploitation of the forests which have had the effect of reducing Russia's exports of other types of wood also.

The history of Russian policy as regards forests has differed considerably from the history of Russian agrarian policy. The agrarian policy, although worked out in its main lines already at the time of the Revolution, was applied only over a long period of years, till finally during the first Five Year Plan a fully socialist agrarian economy was brought into being. As regards the forests, however, from the first day of the Revolution the situation was perfectly clear. All forests were nationalised as from October 1917, and administered by the State alone. Private enterprise by members of whatever social class in the community was completely excluded from the very beginning, and the State stood as the sole proprietor and exploiter of almost a million hectares of forest land. Difficulties, however, presented themselves of an economic as well of a technical nature which limited timber exports and the exploitation of the forests in general.

Through much of the post-War period the U. S. S. R.'s pressing need of foreign exchange made necessary as quick and complete a revival of timber exports as possible, whilst similarly the desire to carry through the plans of industrialisation was a factor making for a more intense exploitation of the forests. Hence trees were cut down wherever they were most easily accessible, namely in the central industrial regions, near the railway lines etc. so that the forests were being rapidly thinned in such areas with the result that rivers were becoming blocked by sand and all the usual adverse effects as regards climate and soil erosion began to show themselves. Consequently in order to stop the consumption of forest capital in these regions the law of 1936 set up special "water protection zones" along the great rivers such as the Volga, the Don, the Dneiper, etc. further felling being prohibited over a total area of 15 million hectares in the form of strips from 4 to 20 kilometres broad along both banks of the rivers, whilst in the more distant areas on both sides of the rivers the annual fellings must not exceed the annual new growth.

The practical result of this law has been to withdraw from exploitation for a period of years some 54 million hectares of forest land in the central territories of European Russia, which had in 1935 provided 52 per cent. of the total timber production of the U. S. S. R. In the Ukraine alone as a result of this water protection law the volume of timber felled has declined from 7 million cubic metres

in 1932 to 2.5 million cubic metres in 1938. Also as a consequence of this law exploitation of the timber resources is being confined to an even greater extent than before to the more remote territories of the north and east. Measures in this sense had indeed already been laid down before by the Forest Code of 1923 and by the law of 1931, but with little effect in practice.

There are still, however, immense forest reserves in Russia yet awaiting exploitation. The timber supplies of the U. S. S. R. are estimated at 33 milliard cubic metres ⁽¹⁾, so that the yearly fellings in the U. S. S. R., which may be counted as 200 million cubic metres, only represent one third of the new annual growth which is considered to amount to 600 million cubic metres. Clearly therefore a much more intensive exploitation of the Russian forests would be possible, and wood production and exports could be much increased without any such diminution in the forest resources as has already occurred in several other countries.

One of the main obstacles in the way of an exploitation of the forest lands of the north lies in their lack of economic development, the almost complete absence of means of communication making the northern forests largely inaccessible.

The whole of Siberia is provided with only one railway main line, the Transsiberian Railway, with some branch lines to Central Asia, to Tashkend and Orenburg, which are of importance both for the transport of cotton to the north and of grain and timber to the south. Also there is the line connecting Siberia with Turkestan (*Turksib*) built in 1930, which transports much grain and timber. On the other hand there are no branch lines in a northerly direction from the Transsiberian Railway, and it is just these more northerly territories which will be called upon to provide the great bulk of the wood supply.

In the matter of waterways the extensive forest lands of Siberia as of the North U. S. S. R. are mostly much more generously endowed, and in addition the northerly direction of the rivers is a favourable circumstance of great importance as water transport is so much the cheapest means of transport. On the other hand the value of the rivers for purposes of timber transport is limited by the fact that they are all frozen during the long winter periods.

The moving of the forest industry to the more densely forested boarder regions also requires a great capital investment and the movement towards these regions of an abundant labour supply. It is planned to work the Siberia timber where it is cut, hoping in this way to diminish transport costs.

In considering the interzonal timber trade of the U. S. S. R. as explained above, the territorial separation of the tree-felling areas from the timber-working and export areas becomes very striking. The wood is transported from the rich forest zones of the north in order to be worked in the southern and central territories of the U. S. S. R. which are rich in industries but poor in forests. From these territories a part of it travels as a manufactured or semi-manufactured product back to the northern ports from which it is exported. As late as 1936, when the law for the protection of the woods and forests was passed, in the rich

⁽¹⁾ *Great Soviet Encyclopedia* (in Russian), Vol. XXXVI, 1938, p. 782.

forest zones which have 91 per cent. of the timber supplies there were only 37.4 per cent. of the timber factories to be found. The self-sufficient zones, which contain only 6.2 per cent. of the timber supplies, have on the other hand 39 per cent. of the timber factories, whilst in the zones poor in wood which contain only 2.8 per cent. of the total supplies are to be found 23.6 per cent. of the timber factories. It can only be ascribed to the inconvenient localisation of the timber industries that, although the capacity of the factories for the working of wood at the end of the second Five Years Plan amounted to 75 million cubic metres, the programme for wood-sawing till 1937 was only fixed at 38.8 million cubic metres. Hence there result difficulties not only as regards timber exports, but also in the supplying of the home markets.

Before the War the great geographical separation of the tree-felling and the timber-working areas was especially striking. Thus in 1912 the Ukraine and White Russia, which together contained only 1 per cent. of Russia's timber resources, nevertheless worked 18 per cent. of all the sawn timber products of Russia. On the other hand in the richly forested regions of Archangel, Vologda, Karelia and the Far East, which are economically very backward, there were not even saw mills to prepare the locally cut timber for export.

The same phenomenon could be observed in pre-War Russia also with regard to cotton cultivation. From the cotton-growing areas of Central Asia the cotton had to be transported more than 3,500 kilometres to the industrial regions of Moscow and Ivanovo-Voznesensk for spinning, in order then to be transported in the form of yarn back to the cotton-producing territories. This excessive transportation cost the Russian economy no less than 17 million roubles per annum, without counting the considerable unnecessary blocking-up of the means of transport ⁽¹⁾.

The only way of effecting an improvement is to move the processing industries nearer to the raw materials. In this way export would be able to draw directly on the rich timber reserves worked in the great newly-created adjacent saw mills, and would thus become much more profitable.

Also from the standpoint of satisfying home requirements for wood it is a much more rational procedure and one that lowers costs to transport finished wood products of small bulk to the centres of consumption rather than to transport the crude timber still containing about 35 per cent. waste products.

This transference of the timber industries from the zones poor in forests to those rich in forests and the bringing together of the timber-felling and timber-working industries in the north and east (Siberia) is only one instance of the geographical shifting undergone by so many branches of economic life in the U. S. S. R. during recent years.

The aim of the U. S. S. R. of late has thus been to rationalise the forest industries. The policy is no longer to consider the forest resources as a whole only from the point of view of annual exports, but rather to regard the exploitation of the timber resources as a decisive factor in a programme devoted to the

⁽¹⁾ *World Cotton Production and Trade*, I. I. A. Rome, 1936, p. 415:

maintenance and improvement of the forest territories. This forest programme which plans for decades or even longer and the timber export policy which depends on the fluctuations of the market and aims at felling and exploiting the maximum quantities of timber are based on two different and to some extent conflicting principles. There is, on the one hand, the desire to preserve the forests as far as possible, and, on the other hand, to exploit and export the timber resources in the interests of the balance of trade.

Thus there arises a problem which is not easily solved. The one alternative is to slow down the rapid pace of development of the national economy to the slow speed of development of the forest economy with all the important consequences of an economic, social, and cultural nature that such a policy would entail. The other alternative is to accept a policy of maximising present production at the expense of future production, felling as much timber as possible to satisfy all requirements of the national economy, even at the cost of undermining the foundations of the whole forest economy.

The new forest policy adopted in 1936 tries to follow a middle path. It aims at putting the forest economy which has as yet dragged on the development of the national economy as a whole on a new and sounder footing, and at the same time to strengthen the forest economy both for its own sake and for the sake of the whole Russian economy.

However, the merits of this recently adopted policy will only slowly make themselves felt, whilst during the transitional period the demerits will be particularly obvious, especially as regards exports.

Wood consumption within the U. S. S. R.

Simultaneously with the relatively slower rate of wood production the demand for wood in the Russian home market has considerably expanded.

The carrying-out of the industrial programmes laid down in the first and second Five Year Plans required great quantities of building materials, including of course much timber of different types. Also the reconstruction of buildings destroyed by war and the reorganisation of the whole agriculture on the basis of large scale units, whether as State or as collective concerns, meant a great demand for new buildings. Hence it may well be assumed *a priori* that the large quantities of timber required for the speedy rebuilding of Russia's own economy had an adverse effect on timber exports.

The consumption of sawn wood increased from 7,100,000 cubic metres in 1913 to 29,300,000 cubic metres in 1936. During the course of the second Five Year Plan more than 1 milliard cubic metres of timber were provided for building and fuel purposes - 1,117.62 million cubic metres in all, of which 735.78 (56.9 per cent.) were for building and 481.84 (43.1 per cent.) for fuel. Wood for fuel is not exported from the U. S. S. R., the total production being consumed at home.

The use of wood as fuel has been declining in the U. S. S. R. over the last few years, whereas the use of coal has been on the increase, as is shown by the following statistics for 1933-37.

TABLE XXV. — *Use made of different Types of Fuel.*

	(Percentages)	
Type of fuel	1933	1937 (plan)
Wood	17.4	11.9
Peat	4.35	5.0
Shale	0.05	0.15
Oil	17.7	13.1
Coal	60.5	69.85

Thus the share of wood in the U. S. S. R. fuel economy has declined by more than 5 per cent. in the second Five Year Plan. The case has, however, been similar as regards oil, the use of which as a fuel has declined by something under 5 per cent. On the other hand the share of coal has gone up by nearly 9 per cent., thus about counterbalancing the decline in the share of wood and oil. According to the plan 1942 is to see a further reduction in the use of wood and oil as a fuel.

However, if the use of wood as a fuel is on the decline the use of wood in other branches of the Russian economy has increased considerably. Without in any way claiming to go into the matter fully here we may simply mention the following timber industries which make increasing use of wood as a raw material.

As regards ply-wood, for example, it is being used to an ever increasing extent in the *furniture* industry, both in the export and in the home branches of that industry. The U. S. S. R. was indeed the first country to place products made of ply-wood on the market. The principal wood used for this industry is birch. The development and production of ply-wood increased from 124,000 cubic metres in the fiscal year 1927-28 to 672,000 cubic metres in 1937, thus increasing more than fivefold over a period of ten years. From the economic standpoint the export of ply-wood is very profitable, for 1 cubic metre of worked ply-wood gives about 4 $\frac{1}{2}$ times as much foreign exchange as 1 cubic metre of sawn ply-wood.

Moreover, in this industry a fairly important rôle has been played since pre-War times by domestic industry, by the so-called *Kustari*, who engage in timber work in the forest, in the chemical and mechanical treatment of wood, in the making of furniture, in the preparation of artistic objects, of articles of agricultural and domestic use, of toys etc. About half of the *Kustari* were grouped in 4,029 forest co-operatives with about 400,000 members on January 1, 1937. 85 per cent. of the members of these co-operatives are villagers or are in one way or another connected with agriculture. The domestic industry thus plays an important rôle in many parts of the U. S. S. R. as a financial aid to the peasants, especially in the long winter months.

The *paper* industry has also developed rapidly, in the U. S. S. R. The paper production which in 1913 only amounted to 200,000 metric tons reached 966,000 metric tons in 1938, a nearly fivefold increase. At the same time Russia's paper imports fell from 147,000 metric tons in 1913 to 2,300 metric tons in 1937.

Based on the abundant raw material available the U. S. S. R. is now striving to set up an industry to convert this wood into paper. Of the world production of paper and cardboard, which was estimated at 30 million metric tons in 1937, the share of the U. S. S. R. amounted to about

one thirtieth. The U. S. A. is easily the world's chief producer of paper, followed according to the year by Canada, Germany, the United Kingdom, France, Sweden, Finland etc. The production of paper per head of population is still small in the U. S. S. R., about 6-7 kilogrammes per head, which is only a fourth or fifth of the figure reached in the U. S. A. and in some European countries.

The paper industry, of which wood provides about 80 per cent. of the raw material, will consequently require 800,000 metric tons of wood for the production of a million tons of paper. One ton of pulp-wood is [presumed to take up 1.818 cubic metres (¹), so that now the new Russian paper industry consumes about 1,440,000 cubic metres of wood.

The *artificial silk* and *chemical fibre* industry, which also uses wood to the extent of about 80 per cent. as its raw material, is developing ever more rapidly in the U. S. S. R. The production of rayon reached 7,200 metric tons in 1938, as against 300 metric tons in 1913. Russia's production exceeds that of Canada, 6,200 metric tons in 1938, and that of Poland, 6,204 metric tons in 1938, but is considerably below that of the U. S. A. and Japan, the first and second greatest producers with an output of 123,000 and 96,000 metric tons respectively in 1938.

Also as regards staple fibre, production in the U. S. S. R. is on the increase, for the greater profitability of wood exports in processed form leads to an ever greater reliance on the Russian forest as a source of raw materials for textiles and as a means to improve the balance of trade.

In this connection mention should also be made of the *match* industry as a consumer of wood. Whereas in 1913 production only amounted to 38 million cases (each containing 1000 boxes) now the annual production of the U. S. S. R. amounts to 11 million cases. Thus the U. S. S. R. has become the world's chief producer of matches, being followed by the U. S. A. with an annual production of 8 million cases, China with 6 million cases, Japan with 4 million and Sweden with 2 million. The share of the U. S. S. R. in world match production therefore amounts to 24 per cent., and of this production 10 per cent. is exported, thus providing 20 to 25 per cent. of the world match exports. The quantity of wood employed by this industry has risen from 150,000 cubic metres in 1913 to 400,000 cubic metres in 1936.

These few examples have been cited to show the great and ever increasing importance of timber in the economic life of the U. S. S. R. Wood consumption shows a continuous and progressive increase, whereas, for the reasons already stated, wood production increases at a somewhat slower rate.

Russian timber markets before and after the War.

As is shown by Table XXVI before the War the principal exports markets for Russian wood were the United Kingdom and Germany, which took something over and something under a third respectively, and Holland which took a sixth

(¹) *International Yearbook of Forestry Statistics 1933-1935*, I. I. A. Rome, 1936, p. 19.

TABLE XXVI. — *Russian Timber Exports to the principal Importing Countries.*
(Percentages of total exports for the year)

Country	1913	1929	1932	1936
United Kingdom	35.6	38.2	37.2	41.6
Germany	32.6	14.4	10.5	19.6
Netherlands	16.3	15.6	12.2	11.6
Belgium	3.9	2.9	5.9	6.8
France	4.9	3.1	2.5	5.2
Japan	0.2	0.3	4.2	—
Italy	0.3	0.8	2.8	—

of the total Russian timber exports. Thus these three countries together accounted for almost 85 per cent. of Russia's timber exports, whilst the other countries were all of rather minor importance. France occupied fourth place with a share of about 5 per cent. in Russia's timber exports, followed by Belgium with about 4 per cent., whilst Italy accounted only for 0.3 per cent. and Japan 0.2 per cent. Hence before the War Russia disposed of 94 per cent. of her timber exports in these seven markets.

After the War Russia's principal markets for her timber were essentially the same as before the War, only their relative importance having somewhat changed. As regards Germany, for example, her share in the timber exports of the U. S. S. R. fluctuated from 14.4 per cent. in 1929 to 10.5 per cent. in 1932, rising to 19.6 per cent. in 1936. Italy whose share had risen to 2.8 per cent. in 1932 took practically no wood from the U. S. S. R. in 1936. The British market on the other hand has been of ever increasing importance, the United Kingdom having absorbed over two fifths of the timber exports of the U. S. S. R. in 1936. Moreover the United Kingdom is the most important timber market of the world, for whereas most countries satisfy the greater part of their timber requirements from their own territories, the United Kingdom meets as much as 90 per cent. of its requirements by imports.

The Belgian demand for Russian timber has also shown a relatively considerable expansion, having increased from 3.9 per cent. in 1913 to 6.8 per cent. in 1936. France's timber imports from Russia, after having shown a relative decline in 1929 and 1932 exceeded their pre-War percentage (4.9) in 1936 (5.2). The Dutch market has been of declining importance, having taken only 11.6 per cent. of Russia's exports in 1936 as against 16.3 per cent. in 1913, and in addition it should be noted that a part of the timber exports to the Netherlands are re-exported to the United Kingdom and should hence really go to swell the percentage of Russia's timber exports to the United Kingdom.

Of the other less important markets for Russian timber, 20 or over in number, scattered in all parts of the globe, no further mention will be made here. Instead we will now examine in greater detail the main markets in the years 1934 and 1938 for some of the principal types of wood, especially sawn timber, pulp-wood, pit-props and ply-wood.

Sawn timber. — The export of sawn timber is much the most important part of the timber exports of the U. S. S. R., and to an even greater degree now than before, for whereas the export index (1934 = 100) of total Russian timber exports fell to 49.06 (Table XXIV) in 1938 that of sawn timber exports fell only to 66.64 (Table XXVII).

The main market for Russia's sawn timber exports is the United Kingdom which in 1934 and 1938 received 37 and 51 per cent. respectively of Russia's exports of this type of wood. Of the British sawn timber imports in 1937 the U. S. S. R. provided 18.5 per cent. and thus had about the same importance as Sweden, the exports from these two countries only being exceeded by those from Finland and Canada which provided 22.5 and 19.5 per cent. respectively of the United Kingdom's sawn timber imports.

The second most important market for Russia's sawn timber is Germany which in 1934 absorbed 16 per cent. of Russia's exports of this type of wood, although in 1937 the proportion fell to 6 per cent. but rose again to 13.3 per cent. in 1938. In 1936 the U. S. S. R. provided 33 per cent. of Germany's sawn timber imports and thus was Germany's chief source of supply. In 1937, however, Russia only provided 11 per cent. of Germany's sawn timber imports, whereas Finland provided 19 per cent. Czechoslovakia 15.5 per cent. and Sweden 15 per cent., the U. S. S. R. thus falling to fourth place.

The Netherlands in 1934 took 15 per cent. of Russia's exports of sawn timber, thus occupying third place after the United Kingdom and Germany; and in 1937 this share even rose to 19 per cent. although in the following year it fell back to 16.1 per cent. In 1938, owing to the decline of German imports, the Netherlands were the second most important market for Russia sawn timber, their imports being exceeded only by the admittedly much greater imports of the United Kingdom. In 1937 44.5 per cent. of the Netherlands' sawn timber imports came from the U. S. S. R., which was thus easily the country's main source of supply, whilst Finland and Sweden provided 16 and 13 per cent. respectively.

Belgium took 6 and 6.4 per cent. in 1934 and 1938 respectively of Russia's sawn timber exports, Belgium indeed constituting a remarkably steady market for this Russian product. The U. S. S. R. provided 20.5 and 25 per cent. in 1936 and 1937 respectively of Belgium's sawn timber imports, occupying a position second to that of Finland which provided 41.5 per cent., but superior to that of Sweden which provided 11.5 per cent.

In absolute figures more sawn timber was exported to Italy than to Belgium in 1934, the relative share, however, being also in the neighbourhood of 6 per cent. But in the last two years, 1937-38 the exports to Italy have shown a drastic decline, and even in 1936 Italy accounted for no more than 1.4 per cent. of the Russian exports of sawn timber. In 1937 Italy drew 74.5 per cent. of its sawn wood imports from Austria, 19.5 per cent. from Yugoslavia and 3.5 per cent. from the U. S. A.

As regards France, Russia's exports to this country, although never on any important scale remained comparatively steady, amounting in 1934 and 1938 to 4 per cent. and 3.3 per cent. respectively. The U. S. S. R. provided 24 per cent. of France's sawn timber imports in 1937 as against Sweden's 29.5 per cent.

TABLE XXVII — *Exports of Soft Wood, Sawn and Planed from the U. S. S. R.*

Destination	1934		1935		1936		1937		1938	
	Standards	Per-centage of total exports	Standards	Per-centage of total exports	Standards	Per-centage of total exports	Standards	Per-centage of total exports	Standards	Per-centage of total exports
United Kingdom	385,798	37	426,477	38.5	447,157	44	465,747	50.5	351,116	51
Eire	17,252	1.5	21,800	2	23,608	2.3	30,442	3.5	4,477	0.6
France	45,347	4.5	55,244	5	55,408	5.4	36,093	4	23,014	3.3
Belgium	58,483	6	45,205	4	55,558	5.5	65,585	7	43,892	6.4
Netherlands	153,984	15	178,333	16	175,163	17.2	175,193	19	111,175	16.1
Denmark	18,403	2	20,904	2	11,381	1	—	—	8,246	1.2
Germany	164,905	16	132,163	14	124,762	12.3	54,063	6	91,416	13.3
Italy	59,488	6	47,819	4	14,768	1.4	—	—	—	—
Greece	7,073	0.5	9,692	1	8,177	1	5,196	0.5	6,177	0.9
Norway, Sweden, Finland	38,270	3.5	31,343	3	13,434	1.3	8,320	1	4,223	0.6
Palestine, Iraq, Syria	16,075	1.5	13,728	1.5	12,324	1.4	7,306	1	702	0.1
Iran, Far East	1,236	—	2,474	—	1,328	—	2,207	—	—	—
Egypt	19,293	2	29,546	3	19,408	1.9	19,204	2	10,267	1.5
Morocco	6,081	0.5	6,579	0.5	3,749	0.3	2,097	—	972	0.1
South Africa	20,369	2	21,980	2	22,783	2.2	32,462	3.5	23,388	3.4
Other African territories	—	—	6,889	0.5	4,992	0.5	—	—	—	—
North America	5,280	0.5	16,657	1.5	19,073	1.9	18,227	2	—	—
South America	10,150	1	10,459	1	1,795	—	—	—	—	—
Other non-European countries	5,901	0.5	7,384	0.5	1,604	—	—	—	—	—
Total	1,933,387 (100)	100	1,104,676 (106.90)	100	1,026,782 (98.39)	100	922,222 (89.24)	100	688,650 (66.64)	100

and Finland's 17.5 per cent., these three countries being France's main sources of sawn timber imports.

Considerations of space prevent us from examining the other foreign markets for Russia's sawn timber.

Pulp-wood. — The second most important item in Russia's wood exports is pulp-wood (Table XXVIII). Until recent years the German market was all-important for Russia's pulp-wood exports, of which 60 per cent. went to Germany in 1934 and 70 per cent. in 1935; in 1938, however, Germany accounted for only 8.7 per cent. of Russia's pulp-wood exports. In 1936 the U. S. S. R. provided 42 per cent. of Germany's pulp-wood imports and was the main source of supply for Germany, but in 1937 this figure had fallen to 22.5 per cent. whereas Finland's share in Germany imports had risen to 23 per cent. In 1938 the Netherlands took over Germany's former position of chief customer for Russian pulp-wood, the Dutch share of Russia's wood exports having risen from 8 per cent. in 1934 to nearly 42 per cent. in 1938. In 1937 the U. S. S. R. provided 67.5 per cent. of the Netherlands' pulp-wood imports, as against 19.5 per cent. provided by Finland.

France has considerably expanded its pulp-wood imports, its share of total Russian exports having risen from 10 per cent. in 1934 to 21.6 per cent. in 1938, so that France is now the second most important foreign customer for Russia's pulp-wood. In 1937 the U. S. S. R. provided 64 per cent. of France's pulp-wood imports as against 32 per cent. coming from Finland.

The Belgian market has shown relatively an even greater expansion, the share of total Russian exports absorbed by it having risen from 1 per cent. in 1934 to 13.4 per cent. in 1938. The U. S. S. R. provided 58 per cent. of Belgium's pulp-wood imports in 1937 as against 11.5 per cent. provided by Finland.

In 1934 Italy absorbed 3 per cent. of Russia's pulp-wood exports, which figure fell to 2 per cent. in 1936, whilst in 1937-38 these exports ceased completely.

Considerable quantities of pulp-wood, amounting to 7 per cent. in 1934, were at one time exported to Scandinavian countries, but now, as a result of the Russian policy of converting the pulp-wood into paper at home, these exports have completely ceased.

Pit-wood. — The Russian pit-wood is predominantly exported to the United Kingdom. In 1937 the U. S. S. R. exported in all 1,577,651 cubic metres of pit-wood, of which 1,078,083 cubic metres went to the United Kingdom, whilst in 1938 out of a total export of 935,340 cubic metres 481,658 cubic metres went to the United Kingdom — there has thus been a certain decline. Belgium is the second most important purchaser of Russian pit-wood, her imports in 1937 and 1938 having amounted to 424,871 and 374,448 cubic metres respectively. Smaller quantities are exported to Germany, France, the Netherlands etc. The markets for pit-wood are necessarily not very numerous, being limited to those countries which have rich coal deposits but scanty supplies of timber suitable for pit-wood.

Unlike pit-wood, ply-wood is exported to many countries. The greater part again goes to the United Kingdom, which in 1934 took 50 per cent. of the total Russian exports, in 1937 70 per cent. and in 1938 57 per cent. Then after

TABLE XXVIII. — *Exports of Pulp-Wood from the U. S. S. R.*

Destination	1934		1935		1936		1937		1938	
	Stercs (1)	Per-centage of total exports	Stercs	Per-centage of total exports	Stercs	Per-centage of total exports	Stercs	Per-centage of total exports	Stercs	Per-centage of total exports
United Kingdom	388,788	8.5	372,860	9	351,642	9.3	286,129	12	120,631	11.4
France	455,686	10	254,690	6	476,978	13	744,188	31	260,051	24.5
Belgium	42,275	1	155,056	4	189,205	5	182,358	7.5	142,229	13.4
Netherlands	385,986	8	220,684	5	296,400	8	392,700	16.5	442,968	41.9
Germany	2,732,816	60	2,993,994	70	2,147,983	57.5	787,746	32.5	91,822	8.7
Italy	124,898	3	116,096	3	66,039	2	—	—	—	—
Norway, Sweden, Finland	320,735	7	86,645	2	160,257	4	9,639	0.5	—	—
Estonia, Latvia, Lithuania	71,590	1.5	63,506	1	26,195	0.5	6,285	—	—	—
Other countries	33,890	1	57	—	15,661	0.5	2,460	—	—	—
Total	4,556,664 (100)	100	4,263,498 (93.57)	100	3,730,360 (81.87)	100	2,411,505 (52.92)	100	1,057,701 (23.21)	100

(1) A stere is a stacked cubic metre of wood, that is to say, a cubic metre of wood including the intervening air-spaces.

a wide gap comes Germany which in 1934 and 1938 took 10 and 12 per cent. respectively, Belgium accounting for a further 5 and 10.5 per cent. The Netherlands' share rose from 6 per cent. in 1934 to 8.5 per cent. in 1937, but this fell to 1.8 per cent. in 1938. The Italian market for ply-wood has been relatively important, having absorbed 8 per cent. of Russia's ply-wood exports in 1934, which figure, however, fell to 4 per cent. in 1935 and 1936 and to zero in 1937-38. On the other hand the Greek market has been expanding somewhat, 2.5 per cent. of Russia's ply-wood exports having gone to Greece in 1938 as against only 1 per cent. in 1935. Smaller quantities of this type of wood are also exported to other countries and continents.

General tendencies and prospects of Russian timber exports.

From the above description of the facts about the Russian timber economy and from the analysis of the factors determining the present-day evolution of the Russian timber market, the following are the outstanding tendencies most clearly at work.

The process initiated by the 1936 law on water and forest-protection zones of a shifting of the areas of forest exploitation to the well wooded but less accessible territories in the north and east of the U. S. S. R. is one of the most important factors in the forest economy of the U. S. S. R. This measure, designed to improve the whole forest economy of the country, will, however, require several more Five Year Plans before it will be fully carried out.

Furthermore the opening up and exploitation of the enormous forest resources of the U. S. S. R. requires a great capital investment, technically skilled labour, and such an improvement of living conditions as would be afforded by the construction of roads, houses, schools, social centres etc. in order to make the lives of the workers in the remoter forest districts more attractive. Only in this way will it be possible for the forests to have the importance in the economic life of the U. S. S. R. to which they are entitled.

The timber industry is perhaps the only branch of the national economy of which the economic plans are seldom completely realised. The plans are always based on the amounts of timber needed by the rapidly developing national economy, but the providing of such amounts of timber becomes each year more difficult because of the shifting of the forest areas open to exploitation. Till there is some measure of adaption of the forest and timber plans to one another such divergencies are apparently unavoidable, at least during the transitional period.

The U. S. S. R. will hardly be able to export a greater proportion of its timber production than it now does, without adverse effects on the steadily rising home demand for timber. Admittedly if conditions in the international timber market improve it might become economically worth while to raise the proportion of the timber production destined for export. At present, however, Russian timber exports are on the decline, partly due to the conditions of the international market and hence affecting all timber exporting countries, but partly also due to the reconstruction of the whole Russian forest economy.

In addition note must be taken of the change in the composition of the Russian wood exports, the exports of the treated woods, such as sawn wood and veneers expanding at the expense of the less profitable unworked timber exports. In this connection the great decrease in pulp-wood exports during recent years is especially significant. At the same time the home paper and cellulose industries based on these raw materials are being greatly expanded.

As a result of this tendency the economic function of the Russian timber resources is undergoing a change. Instead of constituting a factor in the balance of trade timber is now being used to an ever-increasing degree as raw material for the paper and textile industries.

(A note on the fur exports of the U. S. S. R. will appear in the December number of this Bulletin.)

M. TCHERKINSKY.

INTERNATIONAL CHRONICLE OF AGRICULTURE

UNITED KINGDOM

In the last chronicle for the United Kingdom published last month we saw that imports of agricultural products during the first six months of 1939 were considerably smaller in value than corresponding imports during the first half of 1938, due in the main to a fall in the value of cereal imports. The volume of imports was, however, in several cases greater; there was a considerable increase in the imports of wheat and oats which are not subject to quantitative restriction; but there were also small increases in the imports of some of the products which are regulated by quotas.

Regulation of imports.

The imports that are quantitatively regulated are: beef, mutton and lamb, bacon and ham and pork, potatoes, certain processed milk.

Beef and Veal. — Imports of beef and veal have been quantitatively regulated since 1933. *Chilled* beef came at that time almost exclusively from South America, and in accordance with the Ottawa Agreement Act, 1932, imports from all foreign countries were restricted by the Government to 90 per cent. of the imports from foreign countries in the "Ottawa Standard" year July 1931-June 1932. Empire imports of chilled beef were not limited. *Frozen* beef, on the contrary, came mainly from Empire countries, and until 1937 these supplies were unrestricted: shipments from foreign countries were however restricted by Orders made under the Ottawa Agreement Act, progressive reduction being made till the annual quantity of these imports was 65 per cent. of those in the "Ottawa Standard" year.

In 1937 began the regulation of both foreign and Empire supplies of all kinds of beef, by the International Beef Conference set up in that year ⁽¹⁾. This Conference consists of representatives of the exporters of beef to the United Kingdom and United Kingdom producers. This Conference meets regularly in London and establishes quarterly quotas.

⁽¹⁾ See the April 1938 number of this Chronicle page 214.

Beef Import Quotas.
(Thousand hundredweight)

	1937	1938		1939	
	2nd. half	1st. half	2nd. half	1st. half	2nd. half
Chilled beef:—					
Australia	285.7	270.8	337.7	276.4 (f)	(200.0)
New Zealand	134.0	238.0	184.0	279.0 (f)	(128.0)
Other British sources	62.5	61.0	58.5	61.0 (f)	(44.0)
Argentina	3,412.5	3,537.3	3,324.2	3,455.0 (f)	(1,629.3)
Brazil	131.5	377.7	131.5	371.9 (f)	(130.2)
Uruguay	263.7	298.3	258.6	291.7 (f)	(162.1)
Total	4,289.9	4,783.1	4,294.5	4,735.0	(f)(2,293.6)
Frozen beef:—					
Australia	(a) 1,211.0	(b) 673.0	(c) 1,392.8	658.3	932.6
New Zealand	364.0	270.0	399.0	246.0	396.0
Other British sources	(a) 83.5	69.4	82.1	47.5	27.2
Argentina	66.8	80.1	106.4	89.3	73.4
Brazil	24.5	6.4	34.0	8.6	24.0
Uruguay	37.8	28.8	55.2	32.1	39.2
Total	1,787.6	(d) 1,127.7	(d) 2,069.5	1,081.8	1,492.4
Beef offals:—					
Total	(e)	(e)	383.6	322.5	(f) (161.1)
Veal:—					
Total	94.1	89.3	138.0	171.4	121.5
All beef:—					
Total	6,171.6	6,000.1	6,885.6	6,310.7	—

(a) Actual imports. — (b) Including veal. — (c) Including veal in the third quarter. —
(d) Including some veal. — (e) No quotas established. — (f) Figures for 3rd quarter only.

Mutton and lamb. — Imports of mutton and lamb were first quantitatively restricted by the United Kingdom government in 1933 after the passing of the Ottawa Agreement Act, 1932 ⁽¹⁾. This Act provided that imports from foreign countries should be progressively reduced till they were 35 per cent. less than the shipments in the "Ottawa Standard year", July 1931-June 1932. They were so reduced by April 1934 and since then quotas have been stabilised.

Quotas for Imports of Mutton and Lamb from Foreign Countries.
(Thousand hundredweight)

1931-32	(a) 1,935
1933	1,625
1934	1,291
1935	1,266
1936	1,307
1937	1,307
1938	1,286

⁽¹⁾ South American countries had voluntarily reduced their shipments in 1932.
(a) Actual imports.

Beef Imports.

(Thousand tons)

	1932	1933	1934	1935	1936	1937	1938
Chilled Beef:—							
Empire sources	0.5	7.1	11.9	23.9	30.9	44.8	50.2
Foreign sources	439.5	401.4	400.6	400.3	408.0	403.7	397.9
Total	440.0	408.5	412.5	424.2	438.9	448.5	448.1
Frozen Beef:—							
Empire sources	78.0	97.5	130.5	111.9	104.2	125.6	118.0
Foreign sources	50.2	48.2	39.9	37.1	40.2	42.2	47.1
Total	128.2	145.7	170.4	149.0	144.4	167.8	165.1
Other Beef:—							
Empire sources	1.4	2.9	2.0	3.1	4.5	4.6	4.9
Foreign sources	39.2	45.1	49.0	49.0	51.0	52.0	52.8
Total	40.6	48.0	51.0	52.1	55.5	56.6	57.7
All Beef:—							
Empire sources	79.9	107.5	144.4	139.9	138.6	175.0	173.1
Foreign sources	528.9	494.7	489.5	486.4	499.2	497.9	497.8
Total	608.8	602.2	633.9	625.3	638.8	672.9	670.9

At the beginning of this year it was provided, however, that foreign shipments during 1939 should be reduced 10 per cent. ⁽¹⁾. This measure concerns the current quota year.

An Agreement with Argentina, signed in December 1936 provided that in 1937, 1938 and 1939 at least 70 per cent. of the total foreign quota should be allocated to Argentina.

No compulsory restriction was placed on imports from empire countries but in 1935 Australia and New Zealand—the only important Empire suppliers—voluntarily restricted their shipments, the object being to stabilize their exports to the United Kingdom at the 1934 level: in 1934 supplies from empire countries were 4 per cent. below those in the Ottawa year, 1931-32.

In 1937 it was agreed that in view of the improved price situation in the United Kingdom Australia and New Zealand should be allowed to ship increased amounts. Supplementary allocations for 1937 and a larger basic allocation for 1938 were arranged. These increases are reflected in the import figures on the next page.

The three countries for which separate figures are given supplied 94 per cent. of total imports in 1938.

The decline in supplies from Argentina and the greater increase in shipments from Australia are noteworthy.

At the beginning of the present year, 1939, as a voluntary agreement was not reached, the United Kingdom Government fixed quotas for empire supplies; these quotas are to bring about a reduction of 3 per cent in empire shipments in 1939 ⁽¹⁾.

⁽¹⁾ See the Chronicle published last month page 435-436 where the reasons for this are given.

Actual Imports of Frozen Mutton and Lamb.
(Thousand hundredweight).

Countries	1932	1933	1934	1935	1936	1937	1938
New Zealand	3,907	3,735	3,555	3,633	3,531	3,602	3,676
Australia	1,152	1,304	1,627	1,785	1,499	1,883	1,899
Argentina	1,372	1,147	922	905	900	890	894
Other countries	496	467	376	376	373	527	421
Total	6,927	6,653	6,480	6,699	6,303	6,902	6,890

Bacon and ham and pork. — Government regulation of supplies of bacon and ham from foreign countries began in November 1933 after a year of voluntary restrictions by the supplying countries. The object of this regulation is to stabilize supplies, and foreign quotas are established after empire shipments—which are unregulated—and home supplies have been estimated.

Bacon imports come chiefly from Denmark and ham imports from the United States. The quota for hams from the United States was increased by the Anglo-American Trade Agreement of November 1938 ⁽¹⁾. This was closely followed by an Anglo-Danish Agreement of December 1938 modifying the basis of the Danish quota: the total quota of bacon and hams was to remain 62 per cent. of the total foreign quota; the guaranteed minimum bacon quota was, however, increased from the previous 62 per cent. of total imports from foreign countries to 68.95 per cent.; the ham quota was reduced to 0.4 per cent.

Bacon quotas were established for the first nine months of this year at about the same level as those for the same period of 1938: the total figure for the first nine months of 1938 was 3,964,000 cwt., that for the same period of 1939, 4,000,000; Denmark's allocation was 2,491,000 in 1938 and 2,589,000 in 1939. The original quotas for January-September 1939 were however subsequently increased to make good deficiencies caused by the home supply and Dominion shipments falling below estimates. This increase brought the total quota for the first nine months of 1939 up to 4,209,000; Denmark's allocation was unaltered. The actual imports from foreign countries in the first nine months of 1938 were 3,780,000.

The total ham quota for 1939 was 549,900 cwt. of which 501,200 was allocated to the United States—which is guaranteed an annual minimum of 500,000 cwt. by the Anglo-American Trade Agreement of 1938.

Imports of frozen and chilled pork from foreign countries are similarly regulated ⁽²⁾.

The figures of actual imports, given below, show the changes that have taken place since the beginning of quantitative restriction of foreign supply, both in total imports and in the distribution of these imports between Empire and foreign countries respectively. It is clear that Empire suppliers have benefited by their freedom from the quantitative restriction imposed on foreign suppliers.

⁽¹⁾ See the Chronicle for January 1939, page 40.

⁽²⁾ An order made in August 1939 released tinned bacon and hams from quota restrictions.

Actual Imports of all kinds of Pigmeat.

(Thousand hundredweight).

	1932	1935	1936	1937	1938
Bacon:—					
Foreign sources	11,008	5,548	4,972	5,028	5,056
Empire sources	384	1,376	1,598	1,898	1,812
Total	11,392	6,924	6,570	6,926	6,868
Ham:—					
Foreign sources	644	466	370	346	416
Empire sources	156	210	300	330	248
Total	800	676	670	676	664
Frozen and chilled pork:—					
Foreign sources	142	270	208	224	310
Empire sources	200	644	816	834	870
Total	342	914	1,024	1,058	1,180
All pigmeat:—					
Foreign sources	11,794	6,284	5,550	5,598	5,782
Empire sources	740	2,230	2,714	3,062	2,930
Total	12,534	8,514	8,264	8,660	8,712

Processed milks. — Imports from foreign countries of processed milk, other than butter and cheese, have since 1938 been subject to restriction by agreement between the United Kingdom interests and representatives of the principal foreign supplying countries. Supplies from Empire countries were subject to no such restriction.

In 1937 imports began to increase again. The arrangement for 1938 then provided for further restrictions of foreign supplies, and the Government decided not to give effect to recommendations made by the Imports Duties Advisory Committee calling for an increase in duties of processed milks.

Actual imports in 1938 showed however further increases, caused by increased shipments by suppliers outside the agreements—mainly certain Empire shippers in the case of condensed milk, and both Empire and foreign shippers in the case of milk powder. Thus in the summer of this year, the Government was led, as a result of representations from milk processors in the United Kingdom, to regulate quantitatively supplies from both foreign and Empire countries⁽¹⁾. This is also to be related to the introduction of a marketing scheme for these products⁽²⁾.

⁽¹⁾ Processed Milk (Import Regulations) Order, 1939, which came into force on June 19, 1939; it provides, that no processed milk (condensed whole milk, condensed skimmed milk, full cream milk powder, skimmed milk powder, buttermilk powder, whey powder, and cream) shall be imported without a licence and certificate issued by the Board of Trade.

⁽²⁾ See page 483.

Imports of Processed Milks.

(Thousand hundredweight).

	1932	1933	1934	1935	1936	1937	1938
Condensed milk unsweetened:							
Foreign countries	307	247	213	156	128	118	94
Empire countries	90	134	129	138	104	210	222
Total	397	381	342	294	232	328	316
Condensed milk sweetened:							
Foreign countries	169	117	109	76	77	99	85
Empire countries	36	28	14	12	12	15	15
Total	205	145	123	88	89	114	100
Condensed skim milk:—							
Foreign countries:	2,089	1,833	1,560	1,338	1,281	1,164	1,136
Empire countries	50	85	68	67	82	80	82
Total	2,139	1,918	1,628	1,405	1,363	1,244	1,218
Cream:—							
Foreign countries	63	61	46	40	34	36	26
Empire countries	74	50	40	34	42	40	26
Total	137	111	86	74	76	76	52
Milk powder:—							
Foreign countries	152	87	77	46	68	124	150
Empire countries	168	193	175	173	174	168	206
Total	320	280	252	219	242	292	356
All kinds:—							
Foreign countries	2,780	2,345	2,005	1,656	1,588	1,541	1,491
Empire countries	418	490	426	424	414	513	551
Total	3,198	2,835	2,431	2,080	2,002	2,054	2,042

Annual quotas have now been fixed:

Annual Import Quotas for Processed Milks.

(Thousand hundredweight)

	Condensed whole milk	Condensed skim milk	Milk powder	Cream	Buttermilk and whey powder	All kinds
Foreign countries	115.4	898.5	56.8	28.9	12.0	1,111.6
Empire	160.0	100.0	175.0	40.0	18.0	493.0
Total	275.4	998.5	231.8	68.9	30.0	1,604.6

It can be seen by comparing these figures with those for actual imports in recent years that these quotas involve reductions of imports. The most important individual item, condensed skimmed milk, is to be considerably less: the imports of this product have been steadily reduced from 2,138,756 cwt. in 1932 to 998,500 cwt. allowed by the present quotas.

The proportion of the total imports coming from Empire countries is relatively larger than it was in the past.

Potatoes. — Imports of potatoes from foreign countries and from Ireland—other Empire suppliers provide only a very small percentage of the total imports—have been quantitatively regulated since November 1934 in order to facilitate the working of the Potato Marketing Scheme. A system of voluntary control had previously been in force. The object of the quantitative regulation is to stabilize market supplies; the quotas fixed vary greatly, according to the prospects of the home-crop, which has fluctuated considerably in recent years.

Imports and Home Production of Potatoes.

(Thousand tons)

	1933	1934	1935	1936	1937	1938
Home-production	4,555	3,404	3,765	3,804	4,048	4,404
Imports ⁽¹⁾	196	154	191	316	222	146

⁽¹⁾ Including supplies from the Channel Islands.

We referred in the last Chronicle to the legislative activity of the last six months and of the measures mentioned two, concerning milk and poultry respectively, were held over for description, in this number.

Milk industry.

The Milk Industry has since 1933 been regulated by producer-controlled monopoly marketing schemes, assisted by advances from the Government ⁽¹⁾.

As the Government developed its agricultural policy it was led to propose a modification in the regulation of the milk industry. Thus, at the end of 1938 it introduced a new Milk Industry Bill. This provided for:

(1) The appointment by the Minister for Agriculture and Secretary of State for Scotland of a non-representative Milk Commission with the duty of supervising the milk industry and of conciliating the parties in any dispute or difference within the industry.

(2) The payment from the Exchequer of contributions to increased quality premiums to be paid by the Milk Marketing Boards, in addition to Exchequer payments under the Attested Herds scheme ⁽²⁾.

(3) The making of unrepayable Exchequer grants over a period of three years, to guarantee stated prices for milk for the manufacture of butter and cheese.

(4) The regulation of imports of milk and milk products.

⁽¹⁾ See the Chronicle for April 1939 which gives a review of the milk industry since the coming into operation of the marketing schemes.

⁽²⁾ These contributions would, it was estimated, amount to about £ 2,000,000 a year.

(5) The establishment of a Commission to enquire into distribution cost and to prepare local experimental schemes for the rationalisation of distribution.

(6) The granting to the Minister of Health of power to make orders prohibiting after specified dates, not earlier than two years after the making of the order, of sale by retail in a specified area for human consumption of milk that is not either pasteurised, sterilised or tuberculin tested.

(7) The making of payments from the Exchequer to the Milk Marketing Boards¹ in respect of losses incurred on milk sold at specially low prices to school children, young children and nursing or expectant mothers⁽¹⁾.

This bill met considerable opposition, particularly from the Milk Marketing Board for England and Wales. The Board objected in particular to the control of the milk industry by an "inexperienced" commission, and it found the prices guaranteed for milk for manufacture much too low. These two objections were echoed by the National Farmers Union. Distributors objected to the provision for the rationalisation of distribution. And in the milk industry in general there was widespread dislike of the prospect of compulsory pasteurisation.

The objections were so strongly expressed that the Government considered it inadvisable to continue with the Bill which was withdrawn.

In the meantime, however, the Milk Marketing Boards, having the promise of increased Government assistance, had begun in October 1938 to pay increased premiums on high quality milk⁽²⁾. The extra payments, not being covered by increased receipts, rapidly reduced the Board's funds, and the Government therefore introduced a temporary measure to fulfil its promise. The measure also provides for the continuation of the subsidy guaranteeing a minimum price for milk for manufacture into butter and cheese; such a subsidy was provided by the Milk Act, 1934 and extended by subsequent acts to the end of September 1939.

Milk Industry Act, No. 2 1939.

This new Act provides for:

(1) Contributions from the Exchequer to quality premiums.

The rates of contribution are those previously published⁽³⁾ and are to be made in respect of the two years October 1938-September 1939 and October 1939-September 1940. The total cost is estimated at £1,900,000 in 1938-39 and £2,200,000 in 1939-40.

(2) Payments to guarantee to the Milk Marketing Board minimum returns on milk sold for the manufacture of butter and cheese.

Under the milk scheme before the passing of this Act the Government guaranteed to the Boards a minimum price of 6d. per gallon in winter and 5d. a gallon in summer for such milk. Now the payments are to be made when the average price of imported butter is less than 125s. per cwt. in the summer and 115s. in the winter, and of imported cheese less than 67s. 6d. per cwt. in summer and 62s. 6d. in winter. The Minister stated that the payments would in effect guarantee a minimum price per gallon of 6.1d in winter and 5.2d. in summer for milk used for butter-making and 6.3d. and 5.1d. for milk used for cheese-making.

The figures for butter are higher than those suggested in the earlier Milk Industry Bill; these were 120s. per cwt 112s. per cent. respectively.

(1) Payments estimated to amount to £ 1,000,000 a year.

(2) See the Chronicle for the United Kingdom published in April 1939, page 179-182.

(3) See the Chronicle for April 1939, p. 180-2.

The average prices of imported butter and cheese are to be calculated by the Ministry of Agriculture and to be averages for six months' periods. Previously the guarantee was for given average monthly figures.

Payments will not be made on more than 125,000,000 gallons of milk for cheese and 125,000,000 gallons of milk for butter.

It was estimated that the cost to the Exchequer during the year October 1, 1938 to September 30, 1939 would be about £50,000, compared with £70,000 payable under the previous milk Act, 1938 ⁽¹⁾.

The amounts paid in past years were:—

	£
1933-34	519,000
1934-35	1,098,000
1935-36	741,000
1936-37	137,000
1937-38	33,000

(3) Government assistance for the continuation of extension of schemes for providing cheap milk to nursing and expectant mothers and children under school age ⁽²⁾. This clause has also retrospective action, referring to the two years October 1, 1938 to September 30, 1940. Retrospective adjustments in the grants to the Boards for the years ending September 30, 1939 will cost the Exchequer £750,000 and the cost for 1939-40 is estimated at £1,000,000.

Under previous legislation £500,000 a year had been made available in each of the years 1934-35 to 1937-38 and £750,000 was provided for 1938-39.

All that remains to reflect of the other provisions of the earlier Bill is a clause providing that the Consumers' Committees appointed under the Agricultural Marketing Act, 1931 shall be consulted when the Boards exercise power to determine prices or terms of sale of milk.

There is no new power to regulate imports, such as was provided in the earlier Bill; but the Board of Trade has made an order ⁽³⁾, under the Agricultural Marketing Act 1933 providing that processed milks shall be imported only under licence issued by the Board of Trade. Government regulation thus replaces the voluntary arrangements previously made with foreign supplying countries for the limitation of imports into the United Kingdom ⁽⁴⁾.

Processed milk does not come within the scope of the milk marketing schemes, but the regulation of the market for processed milk has repeatedly been demanded by the milk industry in recent years and at the beginning of the present year the Minister announced that the Government proposed the establishment of a marketing scheme for processed milk.

Contracts 1939-40. — The contracts fixing the terms for the sale of milk during the years 1939-40 have now been determined. In England and Wales, the Marketing Board, representing producers, and the Central Milk Distributive Committee, representing dealers, retailers, and processors, agreed on prices and terms, and did not have to

⁽¹⁾ See the Chronicle for the United Kingdom published in April 1939, page 179.

⁽²⁾ No details of the financial arrangements for this assistance are to hand.

⁽³⁾ Coming into force June 19, 1939.

⁽⁴⁾ See pages 479-480.

refer the matter to an arbitrator. There is to be no change from the terms ruling in 1938-39, which in turn were the same as those for 1937-38 ⁽¹⁾.

An agreement has also been reached between the Scottish Milk Marketing Board and the Scottish distributors and this likewise involves no changes from the 1938-39 terms ⁽²⁾.

Poultry industry.

The only important individual branch of agriculture other than sheep-farming that remained this summer not subject to any system of regulation nor beneficiary of direct Government assistance was the poultry industry.

The value of the output of poultry and eggs in England and Wales ⁽³⁾ in 1937-38 was estimated to be about £22,600,000, approximated 10 per cent. of the estimated value of total agricultural and horticultural output in that year.

The fowl population was increasing very rapidly up to 1924. From 44,777,184 in 1925 the figure rose to 78,512,900 in 1934 ⁽⁴⁾. This expansion was encouraged by the low prices of feeding stuffs and the satisfactory prices obtained. The increasing production brought in time a fall of prices, and as the expansion attracted many inexperienced new poultry-farmers there was an increase in losses due to disease in the flocks. After 1934 the profitability of poultry-farming was further decreased by a continuing rise in the prices of feeding stuffs. The conditions of the industry became unsatisfactory and the poultry population declined: from 78,512,900 in 1934 to 69,052,700 in 1937. The figures for 1938 is 69,119,300.

In 1933 at the time of the passing of the second of the Agricultural Marketing Acts, Commissions were appointed to prepare marketing schemes for eggs and poultry for England and Wales, and for Scotland, respectively; and when these Commissions had produced their reports a joint Commission was set up to consider the relations between the two suggested Boards and matters concerned with Great Britain as a whole.

No marketing schemes were actually put into operation in Great Britain. There are a very large number of small poultry-keepers and extensive organisation would necessarily be complicated. A joint committee of the National Farmers Union and representations of the poultry-keepers declared in 1937 that a marketing scheme should not contain compulsory price fixing regulations, because this would involve too elaborate organisation.

The scheme proposed by this Committee envisaged registration of producers and the establishment of standards of packing, grading, etc. but no control of output or prices; financial assistance from the Government and quantitative regulation of imports was demanded. The Government refused to grant financial assistance under these conditions, nor was it prepared to restrict imports "for the purpose of raising the normal level of prices": it felt however that "the industry should be safeguarded against possible dislocation of the market resulting from abnormal arrivals from overseas" and was prepared to regulate imports quantitatively in that event. ⁽⁵⁾.

⁽¹⁾ See the April 1939 number of the Chronicle p. 172, the April 1938 number p. 216 and the January 1938 number p. 59.

⁽²⁾ See the April 1939 number of the Chronicle p. 175.

⁽³⁾ Figures for the whole of the United Kingdom are not available.

⁽⁴⁾ Figures for the United Kingdom there is only a relatively insignificant number of geese, ducks and other poultry.

⁽⁵⁾ Declaration of policy by the Minister of Agriculture July 11, 1938.

The conclusions of the various Commissions had shown that not less important than the question of marketing was that of the health and quality of the poultry population. The loss from disease among adult laying herds is, it is believed, more than £4,000,000 a year; i. e. more than 20 per cent. of the value of the output of the industry.

A special technical commission studied the details of the latter question and reported in February 1938.

With this and earlier reports in its hands the Government prepared and introduced into Parliament a Poultry Bill. (1)

Poultry Industry Bill, 1939.

This Bill provides in the first place for the general supervision of the poultry industry by an independent Poultry Commission to consist of a chairman and not more than eight other members appointed by the Minister of Agriculture. The cost of the Commission, estimated at £80,000 to £90,000 a year, is to be borne by the Exchequer.

The principal other provisions of the Act can be described under two heads:

1. Improvement of the health and quality of the fowl population:—

For this purpose the Act provides in the first place for the registration of all persons supplying fowl for stock purposes or eggs for hatching.

The Commission is then to make regulations requiring, among other things, the notification of disease, and prohibiting the use of unsuitable fowls for breeding purposes. The distribution of stock or eggs for hatching from premises at which disease exists or where breeding stock is unsuitable may be prohibited.

In order to improve the quality of fowls, the Commission is to frame an accreditation scheme (2) on voluntary lines. Breeders are to be encouraged to record the production of their stock and eliminate unsuitable stock. Accredited breeders will receive free veterinary service and would be given premiums to recompense them for the trouble and expense of complying with accredited standards. It is estimated that the cost of the premiums, which is to be borne by the Exchequer, may amount to £250,000 over the seven years during which they will be payable.

A Stock Improvement Advisory Committee will be appointed to advise the Poultry Commission generally in respect of stock improvement.

2. — Marketing of poultry products.

The main provision here is for grading and marking. The responsibility for the grading is to be put on the wholesale trade and for the purpose all wholesalers are to be registered with the Commission.

The Commission will make regulations for grading and marking, and when this scheme comes into force it will be an offence, involving penalties, to sell or expose for sale dead poultry, eggs or egg products, that are not properly graded and marked (3) (4).

(1) This Bill passed the House of Lords of July 19, 1939; further consideration of the measure by the House of Commons was however postponed till after the summer recess.

(2) Compare this with the Attested Herds scheme briefly described in the Chronicle for the United Kingdom published in April 1939, page 179.

(3) Certain exemptions to both these requirements will be granted.

(4) All imported eggs, which before the passing of the Act had to be marked with country of origin, will, under the new regulations have to be marked as stored unless the exporting country gives satisfactory assurance that there are proper arrangements for ensuring that stored eggs are marked as such before export and that only fresh eggs are exported without any preservation mark.

The Board of Trade is given power to regulate imports of poultry and poultry products, it such a course is considered necessary to secure the stability of the markets ⁽¹⁾. The Board of Trade may also regulate the imports of eggs in shell if this is necessary to ensure the effective operation of any organised and comprehensive arrangement for the storage of eggs undertaken with a view to modifying seasonal variations in supplies and prices.

A Market Advisory Committee will advise the Poultry Commission in respect of marketing matters.

Other clauses of the Bill provide for the making of service schemes for the purpose of insurance, publicity, storing of surpluses, research, and the provision of market intelligence. In addition a sum not exceeding £50,000 will be provided by the Exchequer for loans to producers' co-operative egg- and poultry-packing stations and for grants for demonstrations of poultry-packing.

Northern Ireland.

The poultry industry in Northern Ireland has been partially regulated since 1924, when the first Marketing of Eggs (Northern Ireland) Act was passed. This and subsequent Acts passed in 1926, 1928 and 1931, provided that wholesale dealers in eggs, their premises and premises used for preserving eggs should be registered. These measures were concerned to ensure the maintenance of certain standard of quality, particularly for eggs exported.

The present position is based not only on this earlier legislation but also on an important Act passed in 1936.

This provides that the wholesale prices to be paid for eggs by registered dealers and other persons buying eggs for resale ⁽²⁾ should be fixed by the Ministry of Agriculture of Northern Ireland: in doing this the Minister is advised by a Committee consisting of three members appointed by the Minister himself, five appointed by the egg-producers' organisations and seven elected by licensed wholesalers.

It also provides for the purchase of eggs on a quality basis, the prices being fixed after the eggs have been examined and tested under regulations prescribed by the Ministry of Agriculture. There are two statutory grades of eggs "new laid" and "second". To ensure that the eggs retailed are of good quality and are stored and sold in good conditions the Act provides for the licensing of all retailers, except those who retail eggs produced by their own poultry or eggs for consumption as part of a meal.

The wholesale prices are fixed on the basis of the estimated merchants selling prices less deduction for transport and remarketing costs.

The marketing cost was determined by an enquiry; it was originally fixed at 21.9d. per long hundred (120) but is subject to revision from time to time; in December 1938 it was 20.86d. The average producers price for hens eggs in Northern Ireland was 8 1/4d. per lb. in 1937 and 8 1/2d. in 1938.

C. PERRING.

(1) The Board of Trade will then make an Order subject to the approval of Parliament.
(2) These latter included by an amending Act passed in 1937.

Prof. UGO PAPI, *Segretario generale dell'Istituto, Direttore responsabile.*

AGRICULTURAL CREDIT: ITS ORGANISATION AND NEW TENDENCIES ⁽¹⁾

SUMMARY: I. *National Organisation of Agricultural Credit.* 1. *Trend of the need for agricultural credit:* Determining factors. The need for credit during the War. The need for credit after the War. Need arising from reconstruction of agriculture. Agrarian reform and the need for credit to which it gave rise in Central and Eastern Europe. Over-population in certain countries and the need for increasing the growing of foodstuffs and of creating new arable land by land reclamation and internal colonisation. The gradual process of the mechanisation and commercialisation of farming. The increasing complexity of the problem of agricultural credit which resulted from the world economic crisis. Increasing demand arising from the changes in farming brought about by the new level of prices. Increasing financial needs arising from economic planning and autarchy. The urgent need for adapting the mechanism of agricultural credit to the new situation, the extraordinary new demands having made the old system inadequate. — 2. *The financing of farming:* Factors making solution difficult. Differences between agriculture, and industry and commerce. Agricultural finance cannot be on a very certain basis and must be adapted to the unstable conditions of agriculture. The lowness of agricultural returns and the difficulty of attracting to agriculture the capital it needs. Means adopted to this end in various countries. Progressive adjustment of the means of finance to the special conditions of agriculture. Need of insuring continuity and stability in the financing of agriculture. The problem enters a new stage with the extension of economic planning. 3. *Types and forms of agricultural credit:* The supplying to agriculture of the capital which it requires is effected in different ways in different countries, according to the physical, economic and social environment. The main types of agricultural credit are: credit for production, credit for the sale and trade in produce, subsistence credit, credit for the carrying out of social aims or projects of general benefit. New tendencies in the organisation of agriculture, and their repercussions on the forms of agricultural credit. Classification of the forms of agricultural credit: according to the duration of the loans; according to the nature of the guarantees; according to their purpose; according to the form of the loan; according to whether or not the lender has the right to claim repayment before a stipulated period; according to the method of repayment; according to the nature of the lending institute. Customary classification of agricultural credit: working credit, credit for the carrying-out of improvements, credit for the purchase of land.

I. — National organisation of agricultural credit.

1. Trend of the need for agricultural credit.

The need for agricultural credit has been increasing rapidly in recent years, under the influence of various factors, some temporary and accidental, others permanent, arising out of the changes in the technique of agriculture which have required ever-increasing capital investment.

⁽¹⁾ Among the most important works for a general consideration of agricultural credit are:
GIACOMO ACERBO: *Storia ed ordinamento del credito agrario nei diversi paesi.* Federazione Italiana.

The far-reaching technical innovations resulting during the nineteenth century from the progress of science, industry and transport, profoundly affected agriculture. At first the farmer was isolated, working almost exclusively to meet the needs of his family and using more or less empirical methods. Later he became concerned more and more with satisfying the increasing market demand; and then, realising the need of increasing yields and guided by systematic propaganda and technical instruction, he adopted modern methods. But as in general he had not the financial means required by these new methods he had to seek credit, not so much to cover working expenses, credit for which he would often obtain through co-operative credit organisations, but rather to obtain capital for land improvement which was more difficult of access.

More recent times must be divided into War and post-War years.

In the War years the farmer was confronted with credit difficulties which resulted from the monetary situation created by the conflict.

The demand for credit was then determined essentially by the need for increasing food crops, particularly cereals, for the introduction of machinery to offset the lack of labour caused by the calling up of men for the armies, and for the extension of animal husbandry to provide for the large consumption of meat, particularly by the active troops. Briefly, it was necessary to improve yields in the belligerent countries in order to increase their economic resistance.

Government intervention became necessary and a large number of measures were taken to make credit more readily available to agriculture (¹). The governments put large sums at the disposal of agriculture, reinforced the guarantees of agricultural loans, and allowed new classes of organisations to provide this form of credit.

In spite of these measures, however, agriculture at the end of the War was in a very unsatisfactory position, loaded with the debts incurred during the inflation of land values. Serious reconstruction problems thus faced the farmers and the governments.

In certain countries there were special causes increasing the need for credit; in particular, the War damage, which was most serious in the north-eastern regions

dei Consorzi Agrari. Piacenza, 1929. — LOUIS TARDY: Rapport sur les systèmes de crédit agricole et d'assurances agricoles. League of Nations. Geneva, 1938. — Rapports sur le crédit agricole présentés au 1^{er} Congrès international du crédit agricole, Naples, octobre 18-23, 1938, organisé par les « Conférences internationales du Crédit agricole », près la Fédération internationale des Techniciens agronomes. — *Probleme des Agrarkredits*. Deutsche Gruppe der internationalen Agrarkredit-Konferenzen im Deutschen Institut für Bankwissenschaft und Bankwesen. Stuttgart and Berlin, 1939. — *Le Crédit agricole*, official organ of the « Conférences internationales du Crédit agricole », Rome. — *The World Agricultural Situation*, volumes covering the years 1929-30 to 1937-38; and *Annuaire international de Législation agricole* years from 1929 to 1938, both published by the International Institute of Agriculture, Rome.

(¹) In accordance with a wish expressed by the General Assembly of the International Institute of Agriculture in 1920 that the Institute should make a study of the measures of agricultural assistance taken in the various countries during the War, its Bureau of Economic and Social Studies published in its Bulletin a series of reports on the measures taken during the War to make agricultural credit more readily available in Austria, Bulgaria, France, Ireland, Italy, the United Kingdom and the United States.

of France, West Flanders, North-east Italy, the Balkan countries, the old Russian provinces of Poland and Galicia.

Not only rural buildings, roads, bridges, dykes, live- and dead-stock, but also the land had been damaged. Trenches and defence works had been made and the land scarred over large areas; forests and plantations of fruit trees and herbaceous plants had been destroyed. The damage was valued at thousands of millions of gold francs; and very large sums were therefore necessary to make it good.

Another very important fact which created a large new demand for credit was the radical change in the distribution of rural property resulting from the agrarian reforms in Central and Eastern Europe ⁽¹⁾. As is well known, these reforms involved the breaking-up of the large estates belonging to the State, to public institutions, to ecclesiastical institutions or to private individuals; these lands were parcelled out in various ways and on various conditions ⁽²⁾ to the farmers.

This is one of the most remarkable effects of the social and economic revolution brought about by the War in Europe. It is difficult to calculate its exact effects as necessary statistics are lacking, but an idea of its extent may be obtained from the approximate figures for the areas expropriated and transferred to the peasants up to the present.

	Expropriated area (Hectares)
Bulgaria	350,000 (1936)
Estonia	2,300,000 (1938)
Finland	1,021,743 (1937)
Hungary	600,000 (1936)
Latvia	1,800,000 (1937)
Lithuania	566,350 (1936)
Poland	2,500,000 (1938)
Romania	5,810,658 (1937)
Czechoslovakia	4,021,617 (1938)
Yugoslavia	2,484,481 (1938)
	<hr/> 21,454,849 <hr/>

In Eastern Europe the distribution of land ownership in the post-War period is very different from what it was before the War. To realise this it is necessary simply to consider Russia, where the agrarian revolution has completely trans-

⁽¹⁾ GIACOMO ACERBO: *Le riforme agrarie nel dopoguerra in Europa*. Firenze, R. Beniporad, 1931.

⁽²⁾ "The Land Tenure Systems in Europe". In *Documentation for the European Conference on Rural Life* 1939. International Institute of Agriculture, Rome, 1939.

formed land ownership and farming; Latvia and Estonia, where the agrarian reform has been also far-reaching; Lithuania and Romania, where large property has been reduced to about 10 per cent. of the total; Yugoslavia, where large property has also greatly decreased. In the countries where such an agrarian reform has been carried out the number of small owners has accordingly shown a great increase; for example it is estimated that the number of peasants who have received land in Romania is 1,393,353. In such cases agrarian reform has transformed a land of latifundia into a land of small owners.

It is easy to realise the difficulties in which the new small owners have found themselves. Agricultural labourers had suddenly been transformed into owner-farmers, who, moreover, were generally without financial means or agricultural training, and who certainly were not in a position themselves to carry on the farm for which working capital and capital for dead-stock and indispensable land improvement was necessary. This change took place moreover in countries poor in capital and without an adequately developed credit organisation. The technical and financial assistance granted by certain governments was not always sufficient. It was necessary to establish a system of farming corresponding to that of peasant property, based on the personal labour of the family. There were thus serious dislocations which had grave repercussions on the running and productivity of the farms, which could have been put on a sound basis only if the required financial aid had been forthcoming.

The credit problem raised by the formation of small property through agrarian reform was different from that resulting from the spontaneous creation of small property or from the large scale schemes of internal colonisation, for in the last two cases the needs of the farmers as a rule had mostly been considered and to some extent met.

In certain countries the need for credit was made particularly urgent, not only by the two special factors mentioned above—*i. e.* the War and agrarian reform—but also by other normal factors. One factor is population increase which, in certain countries, where there was no possibility of emigration, made necessary the intensification of farming by all possible technical means in order to ensure the food supply. A second and very important factor inherent in modern agriculture is the gradual specialisation, mechanisation and commercialisation of farming which requires the ever wider use of chemistry, machinery, and electrification and the rationalising of the structure and organisation of farms, all of which gives rise to a greater need for credit.

An idea of the increased use of machines in agriculture can be obtained from the following figures⁽¹⁾.

The mechanical power available to agriculture in the United States rose from 6.8 million H.P. in 1910 to 16.2 in 1920 and 53.3 in 1930. The use of drills in cereal-growing in Germany rose from 205,079 in 1907 to 509,176 in

(1) H. J. HOFFEN: *La mécanisation agricole et la culture du blé dans le monde*. Communication faite au II^{ème} Congrès international de Génie rural. Madrid, septembre 1935. — *Commerce international de Machines agricoles*, 1936. International Institute of Agriculture. Rome, 1937.

1925 and to 614,200 in 1933; and the number of combine-harvesters rose from 307,454 to 1,023,381 and to 1,308,013, and power threshing machines from 16,750 to 577,657 and to 759,261 over the same period.

Number of Tractors

United States	Canada	U.S.S.R.	United Kingdom	France	Italy	Germany
246,083 (1920)	47,455 (1921)	34,943 (1929)	18,372 (1925)	35,000 (1938)	24,044 (1930)	11,807 (1925)
505,933 (1925)	105,269 (1931)	125,344 (1932)	21,106 (1931)	—	28,162 (1932)	24,118 (1933)
920,021 (1930)	—	204,100 (1934)	—	—	30,210 (1934)	27,000 (1936)
1,600,000 (1939)	—	400,000 (1936)	—	—	37,000 (1937)	62,000 (1938)

The possibility of the use of machinery and the demand for it is constantly increasing. And in the last few years efforts have been made to allow medium sized and small farms to enjoy to a still greater degree the advantages of mechanisation, either by producing small tractors suitable to the technical and economic needs of these farms (Germany, Switzerland), or by the formation of co-operative societies to provide machinery for collective use on small properties.

Further the farmer has been led to use ever greater quantities of chemical fertilizers, which have been adapted to the changing agricultural conditions, and in order to provide himself with these fertilizers he very often has recourse to credit.

There has also been increasing rural electrification⁽¹⁾ which requires very expensive plant. In Germany in 1937 about 80 per cent. of the farms were provided with electric current. The use of the electric motor has gradually become more common, particularly on farms of 20 to 100 hectares; altogether there are over 3 million agricultural users of electricity.

In Denmark the use of electricity has gradually spread and there are now 347 purely rural electricity stations, so that a high proportion of all farms are supplied with electricity; this rural electrification is financed co-operatively with the help of loans. In France there are about 15,300,000 inhabitants benefiting from rural electrification, and in 1936 there were only 2,239 communes not supplied with electricity out of a total of 38,000; the cost involved up to January 1938 was 7,400,000,000 francs of which 4,700,000,000 were unrepayable grant—3,000,000,000 from the State and 1,700,000,000 from the departments, communes and individuals—and the rest, 2,700,000,000, was obtained by loans at a reduced rate of interest. In Italy there has been widespread rural electrification in connection with land reclamation, electricity being used particularly in drainage works; there are 23,670 irrigation works using electric pumps which in 1936 consumed 72 million kilowatts; whilst 125 great consortia for land reclamation and

⁽¹⁾ H. J. HOPFEN: Electricity in Agriculture. *Monthly Bulletin of Agricultural Science and Practice*, August 1939. International Institute of Agriculture, Rome.

more than 250 private drainage stations consume 38 million kilowatts per annum. In Sweden electricity is available on 65 per cent. of the total cultivated land. In the United States the number of farms connected with an electricity network has increased from 177,000 in 1923 to 205,000 in 1925, to 576,000 in 1930, to 745,000 in 1935 and 1,250,000 in 1938⁽¹⁾; in 1935 the Federal Government set up the rural electrification administration which is authorised to afford for ten years grants for rural electrification up to a total amount of \$410,000,000. These loans, which are granted for a period of twenty years and which bear interest at 2.88 per cent. at present, are intended to cover the total cost of the provision of the networks.

Now it is evident that the modernisation of farming methods, and of the processing and transport of products requires ever greater amounts of capital which by reason of the large sums involved and of the slowness of turnover cannot be provided out of the farmer's savings, but has to come from the savings of the community through credit institutions.

The world economic crisis made the agricultural credit problem still more complex, since to the demand for capital deriving from the factors indicated above was added a demand for means of facing the difficulties, and new needs, in particular for effecting the changes and adaptations induced by the new level of prices and for the organisation of a more profitable marketing of products. The experience of the crisis made it clear that under the present conditions of mechanised and commercialised agriculture it is no longer sufficient to produce efficiently, but that good marketing is also essential. A good farming technique must be associated with sales at the best time. This gives rise to a demand for credit for financing sales and for the building of elevators, stores, refrigerators, etc. To the demand for credit for carrying on the process of production has been added a demand for credit for marketing.

Further the tendency towards self-sufficiency which has become widespread since the War, has also increased the demand for financial means. This policy has led to the beginning of new branches of home production and to the setting up of industries producing substitutes for imported goods; and this in turn gave rise to a new demand for capital. Considerable means of production are required in the new and the expanded branches of production on the one hand, whilst at the same time means of production are released from restricted branches of production. In the first stage, autarchy naturally leads to a rise in costs and prices. Thus there results an increased need for means of payment, not only for the transformed branches of industry and agriculture, but also for all those who use home produced goods. In the cases both of newly created undertakings or of existing undertakings expanded or transformed there are three distinct financial phases:

(a) The initial or preparatory stage, when the new plant has to be technically studied and scientifically tested.

(1) J. M. CARMODY: Governmental Encouragement and Financing of Rural Electrification. Report presented to the World Power Conference, Vienna session, 1938.

(b) The phase of carrying out the plans, that is the actual construction of new plant or the adaptation or extension of existing plant.

(c) The phase of the bringing into use of the new plant.

As self-sufficiency programmes are carried into effect the need of capital increases, and as this need cannot in general be covered by voluntary national saving, one of the principal elements and chief regulating factors of every self sufficiency programme is the creation of new savings and the liberation of existing savings from other investments.

Further as economic activity became increasingly the subject of government control and as the idea of planned economy gained ground, there arose an increasingly strict control of agriculture. As is well known this control is not limited merely to the fixing of prices for the principal products, but involves also the regulation of the production itself and of marketing.

The most striking example of this is provided by the Agricultural Adjustment Act of 1933 and 1938 in the United States. The 1938 Act which regulates production and marketing provides for the granting by the Commodity Credit Corporation of loans to farmers to enable them to carry over stocks of the principal crops (wheat, cotton and maize), and to preserve dairy products which would otherwise come into the market the Act provides for credits guaranteed by these products to be available to farmers who adhere to the plan. Marketing quotas have been introduced for the ordinary sale of cotton, wheat, maize, tobacco and rice ⁽¹⁾.

Other less imposing but no less significant examples could be cited to give an idea of the large-scale mobilisation of energy and capital brought about by the application of the principle of planned economy made in most countries in recent years.

The financial position of agriculture which has been sketched above was aggravated by the indebtedness which since 1929 has been increased by the very heavy fall of prices; this indebtedness has caused more or less far-reaching government intervention ⁽²⁾.

Now the question which naturally arises here is: has the credit system been able in general to satisfy the urgent demand for funds caused not only by normal factors, but more by exceptional factors? In many countries the answer is: no. In fact like other branches of economic life, the organisation of credit, in spite of improvements, has not always been sufficiently adapted to changes that have come about since the War in world economy. Since the War there have been, as we have seen, difficult technical, economic and financial problems to be solved. In the first place it was necessary to reestablish on a sound basis those farms of which the production had been interrupted or slowed down or diverted from its normal rotation, and then to improve the position of those farms which had become

⁽¹⁾ See the section on the United States in Chapter VI (Agricultural Policies in the Different Countries) in *The World Agricultural Situation in 1936-37 and 1937-38* published by the International Institute of Agriculture. Rome, 1939.

⁽²⁾ See *Agricultural Indebtedness*. International Institute of Agriculture. Rome, 1937.

unprofitable and heavily indebted by the collapse of prices. Credit methods had, so to say, been overtaken by time and events. They remained more or less fixed in their old traditions. They had in most cases been related to the needs of production and did not give enough attention to the marketing of the products, which after the world economic crisis became of such great importance.

Once it was seen that there was this disproportion in the credit system, in respect both of its structure and its resources, the governments took far-reaching measures to reform and complete agricultural banking organisation. This work, which began after the War, is still continuing.

It would seem therefore of great interest to study the tendencies of this revision; in other words, to examine the way in which the credit system has reacted to the profound changes in the world economic and social order which were caused by the War, by the new conditions of the immediate post-War years and by the world economic crisis.

First we will examine some general aspects of the problem, and in a second section of this article we will consider the organisation of agricultural credit in certain countries.

2. Financing of farming.

We have seen above that as a result of the influence of both normal and extraordinary factors the demand for credit has increased from year to year, and has often been so great that it could not be met out of the financial means of banks and governments, and so remained in part unsatisfied.

A general study of the problem of the financing of agriculture shows that there are several factors making a solution difficult; some concern the peculiar physical and economic conditions of agriculture and others relate to its essentially uncertain character.

It is certain that whatever technical progress there may be, farming will never be entirely subject to human control, so that forecasts will never be reliable. While industrial activity is the result of individual initiative and creates relationships easy to dissolve, agriculture in all its aspects is conditioned by a complex of natural conditions and existing social relationships.

Another essential difference, important from the point of view of credit, between industry and agriculture is to be found in the formation of market prices. Agricultural market prices are in fact not closely related to costs of production, by reason of the variations in unit yield which it is difficult to control and of the difficulty of changing from one crop to another; industrial market prices are, on the other hand, closely related to costs and the industrialist can calculate accurately his future output and can change it according to market forecast or fiscal or tariff policy.

Further the duration of a credit operation is determined by the time necessary for the reproduction of the invested capital, and this is not the same in the case of agriculture as it is in the case of industry and commerce. The farmer in most cases can reproduce his capital only once a year, and cannot shorten his production process which is determined by the laws of nature.

Now the strict dependence of farming on variable physical conditions renders the financing of agriculture very complicated.

Further in addition to the precarious nature of the output of farming, account must be taken of the fact that the total income of agriculture is generally small and in any case lower than that of industry and commerce. For this reason savings are not readily placed in agriculture which provides an investment of a longer duration and yielding smaller profits than other investments. Investors often prefer even risky investments giving larger profits.

This being the case, the problem is to know how to attract to agriculture the capital it needs; in other words how to ensure the supply to agriculture, on terms which it can economically support, of the means necessary for its better and more efficient organisation. In most countries the difficulty has been overcome mainly in the following three ways:

(1) encouragement of co-operative credit organisation, considered capable of supplying the farmer with money at the lowest rate of interest;

(2) government intervention in the form of contributions to the payments of interest on debts, or in the form of special relief and privileges;

(3) the setting up of state agricultural banks or the subsidizing of private agricultural banks.

Agricultural credit policy of most countries in recent years has been concerned with the adaptation of financial methods to the special conditions of agriculture, in order to some extent to offset the risks inherent in agricultural production.

In principle each farmer should possess the capital necessary for the working of his farm without having to have recourse to credit, but in fact this is not the case, for in many countries the great majority of agriculturalists are small farmers without capital. Further it cannot be really expected that the farmer should himself possess all the capital necessary to meet not only ordinary needs, but also extraordinary needs deriving from unforeseen and unforeseeable events. Apart from, for example, unusual weather conditions, there are the diseases of plants and animals which may come in the form of an epidemic. The farmer has to rely on credit for a part at least of the money he needs for working capital, as working expenses can only be covered after the harvest during the following year.

The working capital of a farm has to cover the working cost during two distinct periods. The first is the period from the incurring of working cost to the gathering of the harvest. The second is the period between the harvest and the sale of the produce.

The length of the first phase depends on production conditions, in turn regulated by various factors such as the quality and fertility of the land, the position of the farm, weather conditions, etc.

The length of the second period depends partly on the movement of market prices, a rise in which induces the farmer to sell, and a fall to withhold his products from the market; and on the other hand on the reserves of working capital which allow the farmer to spread his sales more uniformly over the year.

In given production conditions there exists an optimum length of the second phase, and if the farmer's reserves of working capital do not allow him to attain this optimum, he has to attempt to augment his working capital by means of credit; this is the purpose of credits for the financing of products, of which we shall speak later.

It is also important to ensure continuity and stability in the financing of farming, and for this reason it is necessary that lending institutions should be protected from sudden demands for the withdrawal of funds deposited with them. It is thus advisable that such institutions should have resources coming not only from the savings of the public, but also from government advances; this is in fact the case in many countries, particularly in respect of the granting of credits for the financing of products.

Thus the risk of a sudden financing interruption and of the unfavourable repercussions which this has on the market for farm property, is largely eliminated.

With the coming of planned economy the problem of agricultural finance has entered into a new phase. It has lost its traditional almost exclusively private character to become a matter of public concern. The farmers who have been induced to co-operate more or less closely with the government plan for agricultural production, have naturally had government support, in the form of subsidies or credit at reduced rates of interest. This is the case most often when the governments, in order to attain the goals of their agricultural programmes, restrict or increase certain branches of production; but it is also true in the case of the new method of centralising output for preservation and joint sale, which involves marketing in great quantities in place of the marketing of small quantities by individuals.

Through the control of the time distribution of sales a stability of prices and greater profits are sought. It seems the best means of encouraging farmers to produce steadily. But it requires large resources not only for the setting up of plant and buildings, for the preservation and handling of products, but above all for the advances made to farmers against products delivered to the centralizing organisation. This kind of agricultural finance can be ensured only by the intervention of the public authorities most concerned in this kind of organisation which allows the control of production and markets.

3. Types and forms of agricultural credit.

The organisation of agricultural credit varies from one country to another according to the physical, economic and social conditions. Thus in one country agricultural credit will finance only the productive processes, in another it will also be interested in the processing, conservation and sale of the produce, and in a third it may even have aims which are not purely economic but also social, such as the setting up of small owners. In each country agricultural credit should adapt itself to the local requirements, for whenever the link between the organisation and development of credit and the needs of agriculture

becomes weak, signs of maladjustment will soon show themselves in agricultural production and in the conditions of the rural population.

The main types of agricultural credit ⁽¹⁾ are as follows:

- (a) credit for purposes of production in the broadest sense of the term;
- (b) credit to cover the sale and trade in agricultural products;
- (c) subsistence credit, which is only found in certain countries;
- (d) credit for social purposes or for purposes of general welfare.

These different types of agricultural credit may all be found almost equally developed within one and the same country, or only some of them may be found combined in different ways and developed to different degrees, everything depending on the type of agriculture prevailing in the country and the stage of development which it has reached.

New tendencies in the organization of agriculture have had their repercussions on the forms of agricultural credit. In this connection mention should be made of the tendency of small farmers to combine, the movement having become stronger since the last quarter of the 19th century, especially as regards the production and sale of goods. It is this tendency which has given rise to the great network of credit co-operatives for the production, purchase and sale of goods, which have had to turn to credit institutions to obtain the capital necessary for their founding as for their later working. Nowadays, within the framework of the plans regarding agricultural credit an ever larger part is reserved for the financing of such groups.

Furthermore, owing to the world agricultural crisis and the economic planning to which it has given rise there has been an ever growing intervention by the State authorities in the production and sale of agricultural produce. This intervention has taken the form of a control, which is sometimes very far-reaching, of the areas cultivated and the crops harvested. In such cases less attention has been paid to the separate farms than to the total of farms devoted to the particular branch of production under consideration, so that interest has been concentrated less on the individual production than on the product itself, the price of which it is sought to maintain by the regulation of production and sales. Basic agricultural commodities are now regulated from the standpoint of the general welfare rather than from that of the individual as was formerly

(1) A distinction is sometimes made between productive and unproductive credit. By unproductive credit is meant credit which does not really help towards the development and improvement of the agricultural undertaking. The most obvious example of unproductive credit is that formed on the transfer of the property rights in an agricultural undertaking or piece of land, or in the course of agreements arising out of inheritance. Debts contracted during times of agricultural crisis to cover the losses suffered by farmers are also to be considered as instances of unproductive credit. As regards productive credit, obvious examples are loans contracted for the purchase of seeds, fertilizers, machines, and livestock, for the payment of the labour employed, for the extension of farm buildings, for the clearing, drainage or irrigation of land, etc. In addition the so-called indirect credit —i. e. credit devoted to the financing of organisations engaged in the disposal of agricultural products— is considered as a variety of productive credit.

the case. This new policy has arisen largely as a result of the economic crisis, but it seems destined now to remain as the normal policy.

The policy of self sufficiency has also led to an increasing development of all basic products, as regards both foodstuffs and industrial production. This policy, combined in some countries with over-population, has led to the carrying out of important schemes for land reclamation with a view to increasing the area of land under cultivation⁽¹⁾. These plans have required considerable loans from the banks and government departments most closely concerned.

The machinery of agricultural credit, traditionally engaged in relatively simple dealings of interest only to the individuals concerned, has under the pressure of circumstances given way to forms of public financing; so that, in addition to the essentially individual credit of former times, we now find collective credit in favour of groups of producers, of public undertakings and organizations, and of the community in general. The earlier system of agricultural credit has gradually had to adapt itself to this changed state of affairs, and the State has been led to furnish the larger supplies of capital required by these new conditions.

On a closer examination of the forms of agricultural credit which have in practice developed in the various countries one notices that it is difficult to classify them in any simple manner owing to the great number of factors which might serve as a basis.

However, by way of suggestion, the following classifications might be made:

(I) *Classification according to the duration of the loans:*

- (1) short-term credits;
- (2) medium-term credits;
- (3) long-term credits.

(II) *Classification according to the nature of the security offered:*

- (1) credit based on a mortgage of immovable property;
- (2) credit based on movable property:
 - (a) on deposit of securities;
 - (b) on the security of the farm stock, dead or alive;
 - (c) on the security of agricultural products;
- (3) credit based on personal guarantees, that is to say on guarantees offered by third parties.

Loans may also be granted with no further security than the confidence felt by the lender in the moral character and professional ability of the borrower.

(III) *Classification based on the purpose of the loan:*

- (1) credit for the purchase of land;
- (2) credit for setting up farm-buildings and for effecting permanent improvements in the land;

⁽¹⁾ See "Land Reclamation and Improvement in Europe" in *Documentation for the European Conference on Rural Life 1939*. International Institute of Agriculture. Rome, 1939.

(3) credit for the purchase of live stock, machines, tools, seeds, fertilizers, insecticides, etc. or other goods necessary for production, for the payment of wages, etc.;

(4) credit to allow the farmer to keep his products till market conditions become more favourable.

(IV) *Classification based on the nature of the loan:*

(1) loans in money or in money equivalent;

(2) loans in kind.

(V) *Classification according as to whether or not the lender is entitled to claim repayment before the lapse of a certain fixed period of time:*

(1) loans repayable on demand;

(2) loans repayable only after a stipulated date;

(3) loans repayable after previous notice.

(VI) *Classification according to the nature of the lender:*

(1) loans granted either directly by the State or by State banks;

(2) loans granted by semi-official institutions or by private institutions subsidised by the State;

(3) loans granted by private institutions independent of the State, such as mortgage credit banks, ordinary banks, insurance companies, warehouse companies, savings banks, etc.;

(4) by ordinary credit co-operative societies;

(5) by mortgage credit co-operative societies;

(6) by public bodies such as saving societies, etc.;

(7) by private persons.

(VII) *Classification according to the method of repayment:*

(1) loans repayable by instalments;

(2) loans repayable by amortization;

(3) loans repayable in one lump sum.

Often there exists some connection between these different characteristics. Thus, for example, credit for the purchase of land, or for the carrying out of permanent improvements generally takes the form of long-term mortgage credit repayable by amortization. Loans for the purchase of goods needed in production are generally granted against personal guarantees backed by the deposit of securities or on the security of the live or dead stock, and are repayable after a relatively short period. Loans to allow peasants to hold back their products till the market conditions become more favourable are generally guaranteed by the product itself, and are repayable on the sale of the products.

Even so, however, the number of varieties of agricultural credit resulting from the combination of the different characteristics is very great.

Ireland offers the most characteristic example of credits granted directly by the State for the purchase of lands.

The different parts of the British Empire offer good examples of credit granted by the State either directly or through the intermediary of the banks for the improvement of lands or similar purposes.

Italy offers interesting cases of credit granted by semi-official institutions.

France shows a typical example of agricultural credit granted by co-operative institutions.

As regards mortgage credit granted by mortgage banks and other non co-operative institutions, examples are to be found in almost all countries.

The clearest example of mortgage credit co-operative institutions is furnished by the *Landschaften* of Germany, although similar institutions are also to be found in Denmark and Sweden.

A most useful modification of the *Landschaften* was adopted in 1916 in the U. S. A., by the Federal land banks set up under the Federal Farm Loan Act. Here we find an example of a mixed system which can hardly be described as co-operative mortgage credit, yet retains many of the co-operative features of the *Landschaften*. It has since been incorporated in the great reform of agricultural credit effected in the U. S. A. in 1933 under the Farm Credit Administration.

The three chief forms of co-operative credit based on the guarantee of third parties are the Raffeisen system, the Schulze-Delitzsch system and the Luzzatti system.

The Schulze-Delitzsch system and the Luzzatti system, which is really only a modification of the former system, are more suited for urban than for agricultural credit. However, in Italy the people's banks based on the Luzzatti system and in other countries banks founded on similar principles have to some extent furnished credits to agriculture.

The Raffeisen system originated in Germany and has since been adopted in numerous other countries. In some cases it has undergone modifications and new names have been given to these modified systems, but in their fundamental principle they do not differ from the original system. In most countries in addition to the local credit societies regional or national banks have been founded to give them the necessary financial support.

Finally agricultural warrants have been created in order to prevent the over-hasty sale of products and so maintain prices. They have been endowed with legal status in France amongst other countries, as well as in some of the Latin American States.

We have as yet been dealing with the different varieties of agricultural credit which have developed in the more important countries, classifying them according to the various characteristic features. But it should be noted that the distinction generally made in text books is that between credit for working expenses, credit for the effecting of improvements and credit for the purchase of land, which roughly corresponds with the distinction between short-term credit, medium-term credit and long-term credit. We shall now follow the first mentioned of these classifications, examining each variety in turn and considering the ends it serves and the way in which it serves them.

WORKING CREDIT.

The purpose of working credit is to supply the agriculturalist with the necessary capital for the ordinary running of his farm and, above all, with the circulating capital, which being renewed each season or at the close of a few seasons, can be repaid at short date. If, however, as happens in certain countries, it is a matter not only of circulating capital but also of dead- and live-stock, then owing to the different methods of reconstituting these two forms of capital there may result loans which can be repaid only after four or five years.

This type of credit is often compared with ordinary commercial credit in that it generally arises in the case of businesses already constituted and seeks to ensure the continuity of the productive process. However, there are also certain important points of difference, especially as regards the duration of the loan, for whereas commercial credit is essentially short-term in duration, agriculture needs circulating capital repayable generally after a period of about a year. Furthermore, whereas commercial credit is often personal, working credit in agriculture is usually granted against real guarantees. Generally the guarantees are in the form of movable property, for example, the crops or live stock, but sometimes they are in the form of immovable property as in the case of a current account guaranteed by a mortgage. When commercial credit is based on real property the borrower in principle loses possession of the good offered as pledge, as is also the case when an advance is made on the pledge of securities; whereas the farmer generally retains possession of the pledged good and is allowed to make use of it, as in the case of the live- or dead-stock of an estate, and may even alienate it to obtain the money necessary for the payment of his debts, and the case is the same with products of the soil.

The second part of this study, which deals with the subject according to countries, will show the existence of many systems of working credit. These systems vary according to the prevailing types of agriculture, depending on the degree of specialisation practised and the extent to which the farming is intensive in character. Considering the economic function of this form of credit the important thing is to ensure that the loan granted is used for agricultural purposes and in the most effective way. To ensure this, however, is no easy matter, for the great majority of peasants and farmers are lacking in technical knowledge, live isolated far from centres of population, and cannot obtain adequate technical instruction or make the best use of the borrowed capital. Sometimes the lending institutions and agricultural technical institutions have combined to supervise the use of the borrowed capital, some such supervision being especially desirable as the loans are often made under particularly favoured conditions and with part at least of the risk being borne by the community. The growth of this method of supervision indeed constitutes an advance in the working of agricultural credit.

In order to make sure that the loans granted are used for agricultural purposes, legislation has been introduced in some countries to facilitate the granting of loans not only in monetary form, but when possible in kind, especially in the form of fertilizers, seeds, insecticides, etc. This method has received much encour-

agement since it makes possible a supervision of the quality of the agricultural requisites furnished to the farmers, a thing which the farmers cannot generally undertake themselves but which is essential for technical progress in agriculture.

It should be remembered that working credits cover the financing both of the production and of the trade in agricultural goods. As a result of the economic crisis agricultural circles have indeed been especially concerned with the problems arising from the sales of produce. Lending institutions have been led to expand the volume of loans for facilitating the disposal of produce—hence the policy of financing crops, which has greatly increased in importance and caused the adoption of special measures by governments.

The aim of these credit operations is to make advances to the farmers who are spreading the sales of their produce over time to replace the sums they would otherwise have obtained by an immediate sale ⁽¹⁾. For this purpose an order note of hand or warrant is used. A warrant is a pledge, transferable by endorsement; it describes and gives the estimated value of merchandise given as security for a loan; it allows the owner of the merchandise, if temporarily short of money, to obtain the funds required, providing the lender with a first-class guarantee in the form of a real guarantee and without there arising any necessity of selling the goods constituting the security ⁽²⁾. In its legal nature this instrument resembles a mortgage and constitutes a sort of mortgage on movable property.

Did this instrument of credit not exist the farmer in need of money would be reduced to one of three expedients: to sell his crops at whatever price he could obtain for them; to borrow on a simple promise to repay, offering as his sole guarantee such confidence as he may inspire in the lender, which in most cases would hardly be great; or to mortgage any immovable property he may have the good fortune to possess, thus assuming for a simple short term loan the heavy charges of a legally attested undertaking.

Advances on produce are intended for the very purpose of preventing over-hasty sales and thus of reducing excess supplies at the most critical time of the year. But, at the same time, whilst being favourable to producers these advances are not harmful to consumers, for in their absence prices only fall below costs of production on some occasions to rise so much the more above them on other occasions, the benefit of these wide fluctuations going mainly to those who stand as intermediaries between producers and consumers.

Such having been the condition of the trade in the main agricultural products in the post-War years, it must be recognized that the advances to producers have produced consequences not only of economic but also of social interest. In fact they are everywhere especially directed to maintaining the small peasant class ⁽³⁾, a numerous class which cannot dominate but must

(1) LOUIS TARDY: *Le financement des récoltes*. Report presented to the Vth International Conference on Agricultural Credit, Vienna, September 9-11, 1936.

(2) J. CARRET: *Le nouveau régime des warrants agricoles*. Besançon, Jacques et Démontrond, 1936.

(3) LUIGI PAGANI: *Importanza delle anticipazioni sui prodotti agricoli*. Istituto federale delle casse di risparmio delle Venezie. Venice, 1936.

find its place on the markets, and which by reason of its considerable share in production well deserves to be protected.

Advances made on the security of produce raise problems of a technical, financial and legal nature. To make such advances possible it is above all necessary to construct store-places, barns, silos, refrigerating plant, and in general whatever is necessary for the storing and conservation of produce. The resources necessary for the financing of crops may reach a very high figure, especially if, as is frequently the case, the basic products in question are considerable not only in quantity but also in value. In such cases the advances have serious repercussions on the public finances. In the protection of the markets for the main agricultural products credits aiming at regularising supply and demand are of the first importance.

In France, where dealings for the financing of crops are highly developed, especially as regards measures for the defence of the wheat and wine markets, the organisation of this type of credit is of quite special interest ⁽¹⁾.

Not only the funds deposited are employed, for these operations, but also those placed by the State at the disposal of the mutual agricultural credit institutions.

The agriculturalist who desires an advance on his crop generally signs a note of hand or a warrant of a local agricultural credit society which discounts it at the regional bank. The regional bank in its turn has the warrant or note of hand discounted by the *Caisse Nationale de Crédit Agricole* or the Bank of France.

The warrant is a document of a special type; it states the amount of the loan, the date of repayment and the nature of the security. The law of April 30, 1906 tried to make of it a true credit instrument, assuring its circulation and its payment on the date stated. Hence the warrant is transferable by endorsement, and those who have signed or endorsed a warrant are jointly and separately liable. On the other hand the holder may sell the security under easy and quick conditions failing payment of the warrant by the borrower on the stipulated date; and article 12 of the above-mentioned law allows the holder of the warrant precedence as against almost all the privileged creditors; and if the price does not suffice to satisfy his claims, article 13 gives him subsidiary rights against the endorsers and the borrower.

A decree-law of September 28, 1935 has enlarged the area within which agricultural warrants may be used, and has thus helped to increase the credit facilities at the disposal of the agriculturalists.

From 1906 to 1937, 283,400 agricultural warrants were issued on securities valued at 7,966 million francs to cover loans totalling 3,527 million francs ⁽²⁾.

⁽¹⁾ See the report of LOUIS TARDY, already quoted.

⁽²⁾ *Rapport sur le warrantage des produits agricoles pendant l'année 1937 présenté au Président de la République Française par le Ministre de l'Agriculture*. Ministry of Agriculture. Caisse nationale de Crédit agricole. Paris, 1939.

In Germany the right granted to the *Deutsche Getreidehandelsgesellschaft* of issuing warrants (*Orderlagerscheine*) on grain has been transferred by the law of May 30, 1933 to the *Reichsstelle* for cereals, fodders and other agricultural products. As regards financing properly so called a distinction is made between warehousing in the borrowers' own barns and warehousing in the barns of third parties. Only in the second case may the stored produce or goods serve as security for a loan.

From 1931 to 1937 the number of warrants issued was 20,031 on the security of 1,314,289 metric tons of produce distributed as follows: wheat 1,260,836 tons; potato slices 43,301 tons; malt 10,152 tons.

In Italy, under the law of July 5, 1928, advances on the security of agricultural produce may be granted either to private individuals, or to associations which make use of rural funds. They are granted exclusively to producers in cases of retarded sales or lack of produce, and may not exceed three fifths of the value of the produce or goods deposited as security. This form of financing has been encouraged by the introduction of sales in common of the main agricultural products (*ammassi*).

In Yugoslavia, the Silos Company, set up by the decree law of June 14, 1938, has been made responsible for the construction of silos for the storage and necessary treatment of cereals and, in case of need, of fruits, eggs, cheese, etc. For the produce thus put in storage warrants are given on which the financial institutions of the State may grant loans up to 75 per cent. of their value.

In Romania the storage and financing of crops is governed by the law of July 1, 1930 on the construction of silos and the law of April 7, 1937 on general storeplaces and the warrantage of cereals. The Ministry of National Economy is engaged in constructing 80 silos provided with the most modern equipment. The National Bank will finance the storage of cereals, making advances on presentation of receipt warrants up to 70-80 per cent. of the value of the goods deposited by the agriculturalists, private banks, dealers, etc.

In Portugal the discount of agricultural warrants is a credit operation which is carried out by the *Caixa Geral de Depositos, Credito e Previdencia* and the *Caixa Nacional de Credito*. Warrantage is especially important for grain and wine.

In Argentina contracts based on agricultural pledges were introduced by the law of October 19, 1914. The goods named as security guarantee the creditor by special privilege the amount of the loan, the interest payments and the charges involved. The debtor retains possession of the goods serving as security in the name of the creditor.

Similarly in many other countries measures have been adopted to facilitate the granting of credits for the financing of crops. This indeed constitutes one of the most interesting features of the new organisation of agricultural credit.

CREDIT FOR THE MAKING OF IMPROVEMENTS.

The agriculturalist may have need of credits not only for the ordinary running of his farm, but also in order to make improvements. For this reason a distinction is made between capital needed to cover running expenses and capital

needed to effect improvements, taking especial note of the difference in the length of time in which the two types of capital may be recovered. The difference has as its natural consequence a difference in the length of time needed by the borrower to repay the money borrowed, loans for running expenses obviously being repayable much sooner than loans for the making of improvements.

Here we come to deal with a form of credit of great general interest. Improving the land in fact means increasing the economic resources of the country and rendering easier the lives of its inhabitants. Therefore credit for the making of improvements is a type of credit wherein the interest of the individual and the interest of the community most clearly coincide.

This type of credit has also an international importance which should not be overlooked, yet the problem in connection with it is in the first place a national one falling within the sphere of internal policy for each country. It is for the national institutions of each state to consider the possibilities of land improvement, the urgency of the problem within the national territory, and hence also the means of financing such improvements. This applies especially to the large scale works affecting great areas or entire provinces, such as, for example, the great dykes regulating the Nile floods by means of which immense deserts have been opened up for cotton cultivation; the improvement of the former unhealthy regions around the Panama Canal so as to make them suitable for human settlement; the draining of the Pontine Marshes at the gates of Rome, etc. There are thus certain works which may be termed works of improvements in the broadest sense of the term, but which can only be attempted by the initiative, the financial power and the credit of the State.

Closely related to these works are the works necessary to maintain the cultivable area and to protect it from such dangers as floods, avalanches, landslides and similar natural disasters. We shall, however, exclude consideration of such works from the present study because they are not of an essentially directly productive nature and furthermore they can hardly be financed otherwise than by the State, as private capital would refuse to engage in such undertakings.

Hence in the present study we shall confine ourselves to those works of improvement which have the two characteristics that they can be undertaken by private initiative and that they sooner or later bring about an increase in production and in income. Works of this nature are those undertaken to clear uncultivated land, to drain excessively damp soils, to irrigate excessively dry soils, to provide means of transport, to set up barns, silos, refrigerating plant, aqueducts, dwelling houses, etc.

To obtain the necessary funds the main condition is that the work to be undertaken be one that will prove profitable. The lender expects if not a certainty at least a reasonable hope that his money will produce and receive an adequate return.

It is not easy to decide on the exact nature and importance of each work, to determine whether or not it falls within the scope of the present study. Perhaps it will be sufficient to exclude those which, whether because of their magnitude, or because of the length of time necessary to complete them, or because of the number of people affected by them, are necessarily such as can only be carried

out by the State. Examples of such works are the reclamation of the Pontine Marshes in Italy, the draining of the Zuyder Zee in the Netherlands, the adaption of the Jutland heaths for cultivation in Denmark, etc.

There remain the works of land improvement properly so called. The great importance of such works is widely recognized, yet as regards providing the credit required to carry them out progress has been less than was to be desired.

We might first of all mention some of the difficulties encountered, which investigations show to be sometimes of a general character and sometimes of a more individual or national character. These difficulties can be summarised under the following main headings: (1) lack of capital, a difficulty accentuated and generalised as a result of the War; (2) insufficient returns relative to the amount of capital employed; (3) comparatively slow amortization.

The first difficulty must be overcome, if possible, by drawing capital from new sources.

Insufficient returns are a serious obstacle which it is not easy to overcome. Naturally only those plans of improvement should be undertaken which are of a kind that will yield a normal interest rate on the capital needed for their financing. In many cases the improvement in the productive capacity of the land which can be obtained by works carefully executed is sufficiently great to provide adequate returns on the capital needed for the carrying out of such works. If, however, the plans of improvement are themselves unable to yield normal interest charges, in certain cases it still remains possible to obtain subsidies from the State or other interested parties; but these subsidies must be given interest free.

A further very effective form of subsidy consists in a guarantee of interest on the part of the State, or in the granting of exemptions or reliefs from certain forms of taxation.

Among the special reasons which very often constitute difficulties in the way of the financing of works of improvement the following should especially be noted. In many countries the mortgage guarantees required can be provided only after expensive and difficult formalities and may even be unobtainable owing to the existence of earlier mortgages; in some countries the purchasing power of money is very unstable; the conception of agricultural improvement or land improvement is still inadequately defined in law; and frequently the legal texts contain no clauses obliging the landowner to compensate a tenant for improvements effected.

It is indeed indispensable that the mortgage law be clear and precise. Also the procedure should remain always the same and simple to follow, whilst the law courts should be easy of access and provide possible claimants with a quick, reliable and not too expensive means of obtaining their due.

There has also been much discussion on the desirability of introducing legislation to grant the lender of funds destined for the carrying out of improvements a certain degree of preference as against previous mortgages. Such a law would certainly encourage the granting of credit for improvement works, although the privilege would in no case apply to a sum exceeding the increase in value of the improved piece of land. The law for the colonisation of the latifundia in

Sicily which has recently been approved in Italy, does indeed lay it down that the credits granted by the new colonisation institute to the owners shall be guaranteed by a mortgage enjoying certain rights of precedence as against already existing mortgages.

In actual fact large scale improvement works are generally carried out by organised groups of landowners, communes, provinces, etc. Such groups can offer better guarantees to credit institutions than can isolated individual borrowers. Typical examples of such groups are the consortia for land reclamation and irrigation in Italy, the wateringues of Belgium, the hydraulic co-operatives in several countries, the associations for the carrying out of land improvements in Bulgaria, etc.

To ensure that the borrowed money is really used for the purposes intended and that the works are completely carried out, a right of supervision is often granted to the lender of the funds. In some countries the credits are for the same reason only granted gradually as the works are in progress. There are also cases where the State is directly interested in improvement works, either granting subsidies or guaranteeing the capital or at least the interest payments or helping in some way suitable under the circumstances.

This sort of operation is in general left to the mortgage banks, as they have a better knowledge of the capital market and easier access to its resources. The usual procedure for obtaining the funds necessary for this sort of credit is the issue of securities based on land to be retired by drawings as the debts are amortized; but it is above all necessary to use all the means (issue value, etc.) which experience has shown to be available for creating favourable conditions for the issue of the stock, and to avoid too high a rate of interest. It is the function of the credit institute itself to issue the stock when the money market is in a position to take it up. In some countries the process is made easier by a State guarantee, but such a guarantee would be limited to cases where the improvement is recognized to be of benefit to the whole community. In such cases the State also often contributes to the interest payments on the sums borrowed.

A further question to be considered is that of arranging such conditions of repayment as are most convenient both to the lender and to the borrower. Clearly these conditions must as far as possible satisfy the needs of both parties. In general a loan repayable by instalments or by amortization lasts 5, 10, 20 or 30 years.

In principle the repayment of the loans should coincide with the increase in the returns from the land as a result of the improvement effected, so that the repayment charges should not prove too heavy. The amortization payments should begin not at once, but after a period of two to five years according to the importance and nature of the works.

Owing to the agricultural crisis the need for credits for improvements has been particularly felt during recent years in the countries of Central and Eastern Europe. Agricultural credit experts from Bulgaria, Czechoslovakia, Estonia, Hungary, Latvia, Poland, Romania and Yugoslavia met at Warsaw in November 1930 to consider the general problem of medium-term agricultural credit and drew

up a memorandum on the whole subject. To meet the needs of such countries two types of credit were considered.

The first type consisted of loans for the purchase of chemical fertilizers, tested seeds, various agricultural requisites, loans for the fattening of stock, the payment of wages, etc. These are all expenses which sometimes force the peasant to sell his produce at an unfavourable time, for example, immediately after the gathering of the harvest. In such cases credits covering not less than 9 nor more than 18 months would help not only to better the condition of the market for certain cereals – a most important matter for the group of countries mentioned – but would also raise the purchasing power of the agricultural classes by raising the income accruing to them from the sale of their produce.

The second type of credit considered included loans for the carrying out of improvements to raise the productive capacity and value of the land, the maximum duration of such loans in principle to be 5 years. They should especially be used for the following purposes:

- (a) the purchase of dead-stock;
- (b) the purchase of live-stock and especially of breeding animals;
- (c) the repair and enlargement of farm buildings, and in general every type of improvement yielding quick returns;
- (d) the improvement of ponds, vineyards, market gardens, beehives, etc.;
- (e) the clearing of land;
- (f) the carrying out of certain agrarian operations, such as the consolidation of holdings;
- (g) the conversion of onerous debts contracted in the past, if necessary, by recourse to bodies other than the usual credit institutions.

As can be seen, most of these loans are destined to improve the working equipment of the farmer and to provide for its more efficient use.

Now in most of the countries in question the peasants cannot obtain medium-term credit for improvements and thus must content themselves with short-term credit. The result often is that they prove unable to honour their engagements when they fall due, and consequently have to contract new loans at exorbitant rates of interest. In this way the peasants soon come to be in a very precarious position.

The experts from these countries have also recommended the organisation of a special supervisory body to ensure that the loans are employed for the purposes indicated. This supervision might be exercised either before or after the use of the loans. The supervision in advance seems more to be recommended, but it could only be partially effective. Such control can be usefully exercised in the case of credits granted for the purchase of means of production and for the carrying out of certain operations or the fitting of certain installations. In these cases the loans should be allowed only on presentation of the original invoices from certain commercial houses approved by the lending institute or after proof that the operation has been carried out or the improvement effected.

As regards *a posteriori* control, it was thought better that this should be exercised by the lending institution with the help and through the intermediary of local bodies. The effectiveness of such control could be strengthened by

granting the credits to members of a co-operative wherever the nature of the credit to be granted so allows and to the extent that such a course is possible.

Wherever it is shown that the credit is not being employed for the purposes stated or is being improperly employed the lending institution should have the right to cancel the portion of the loan not yet drawn upon.

A particularly interesting case of the organisation of this form of credit is offered by the *Consorzio Nazionale per il Credito Agrario di Miglioramento* ⁽¹⁾ in Italy, a public body specialising in this type of operation. Founded in 1927, its special function is to supply the funds necessary for the most important land reclamation and irrigation works and for the great agrarian reforms. The State, the Bank of Naples, the Bank of Sicily, the more important people's banks and other financial houses take part in the Consortium. Its capital consists of an unlimited number of registered shares of 500,000 lire each, the capital now amounting to 269,500,000 lire. Its function is mainly that of serving as guarantee for the interest-bearing bonds and for the mortgage bonds which the Consortium is allowed to issue, the former to twice and the latter to eight times the amount of the capital; in this way it becomes possible to finance agricultural operations to the extent of about 3 milliard lire. For each loan there is a technical enquiry and a legal inquiry. The Consortium does not work for private interests or in order to find lucrative investments, but to aid the execution of works which will raise agricultural production in quantity or in quality. Hence it limits itself to financing works which are of undoubted value from the technical as from the economic standpoint and where private and public interests coincide.

The contract determining the legal relations between, the Consortium and the borrowers is defined by law as a "contract of loan for the making of agricultural improvements" and has certain special features. First of all, the aim of the operation must be exactly stated. Second, the payment of the loan is effected gradually as the works for which the loan was granted are carried out, and is conditional on the exact and useful employment of the sum already paid for the purposes stated, although the sum actually paid out may be less than the amount of the loan originally promised. Repayment takes place over a period which must not exceed 30 years, by means of the gradual amortization in equal shares of the sum actually received in loan. The security required by the Consortium is normally a mortgage, although it need not be a first mortgage provided that the value of the property mortgaged is sufficient.

During the period 1928-1937 the Consortium has granted loans to the amount of 1,328,676,524 lire, divided as follows: buildings, 307,139,142 lire; improvement of land, 116,051,126 lire; roads, 48,422,838 lire; irrigation, 202,926,847 lire; planting, 90,790,079 lire; land reclamation works, 190,311,410 lire; land purchases for the setting up of small holdings, 10,332,000 lire; miscellaneous 362,703,082 lire.

⁽¹⁾ *Il Consorzio Nazionale per il Credito Agrario di Miglioramento nel suo primo decennio di vita.*

CREDIT FOR THE PURCHASE OF LAND
AND THE CARRYING OUT OF LARGE-SCALE IMPROVEMENTS.

Capital invested in the purchase of land and the carrying out of major transformations as also in the settlement of questions with regard to inheritances can only slowly be recovered by the accumulation of the resulting profits. Hence land credit corresponds to long-term credit, and may extend up to or even over a period of fifty years. The characteristic features of this type of credit are its long duration and the sureness of the guarantee which generally takes the form of a mortgage. This type of credit is really a credit rather to the land itself in which it finds its security than to the owner or cultivator, and in consequence the rate of interest is rather low, at least in theory.

Two conditions must be satisfied for the guarantee to be absolutely reliable, namely that the value of the land mortgaged stands in a favourable relation to the credit granted and that there are no other charges against it. Of these two conditions, whereas the first is economic in character, the second is of a legal nature ⁽¹⁾ and can be satisfied by publishing notice of the mortgage, by an exact description of the estate mortgaged, and by endowing the mortgage with priority of right against all possible other claims. These conditions can naturally be more easily satisfied in a country where there exists a complete land register, so that the efficient working of such a register explains the popularity of mortgage credit in certain countries, just as its absence explains the infrequency of mortgage credit and the slower development of agriculture in other countries.

To set up a mortgage system which offers owners of capital the best possible guarantees as regards the security of the estate and the ease and promptness with which the credit will be liquidated may make possible the import of foreign capital and the creation of mortgage bonds to foreign creditors.

To set up such a system it is indispensable that:

- (1) the mortgage is so constituted as to be easily understood and little burdensome to the bearer;
- (2) the guarantee is sure and the valuation of the property reliable; land credit banks generally do not grant a credit above one half of the value of the property on a first mortgage, the valuing always being very strict and careful;
- (3) the guarantees of the capitalist are protected against the bad faith and insolvency of the debtor, so that he can liquidate his credit quickly and at no excessive cost;
- (4) the mortgage is transferable by a negotiable note.

It is important that there should be such publicity as regards titles to land as allows the capitalist, before granting the loan, to confirm whether the borrower is the sole legitimate owner of the property offered as guarantee, whether the

⁽¹⁾ CARLO DRAGONI: *Economia agraria*. Milan, Hoepli, 1932.

property is free from litigation or irregularities of any sort, and whether there are any other disagreeable surprises in the background.

The mortgage bond is the typical instrument for obtaining the capital necessary for land credit operations, being a document which gives the maximum security and has the widest currency in almost all countries.

The borrower has to pay the lending institute a certain constant sum each year for a given number of years, at the end of which he will have paid both the interest and the capital. This process of the gradual amortization of the debt is indeed the one most convenient for the debtor. These titles backed by land yield a fixed interest, are issued in connection with the totality of the mortgages contracted, and are amortized by the drawing of lots in measure as the loans are repaid.

It should be noted that mortgage credit in addition to its chief economic function can be of great use to the agricultural economy in general. This is the case, for example, when it supplies funds to free land property from servitudes and other real charges limiting the freedom of the owner, to consolidate scattered parcels of land, to buy new lands to be brought under cultivation as in the case of land being opened up for colonisation, etc.

However, in general the lenders do not trouble themselves about the use to which the sums lent are put, and thus it is that land credit does not necessarily promote agricultural progress. Its functions must be supplemented by credit for the carrying out of improvements which, as we have seen, increase the output and the income derived from the land.

The intervention of the State in this branch of credit is justified by the need which such operations have for a legal guarantee. The guarantee may take the form of simple legal rules or of a supervision of the administration of the mortgaged estate to ensure the proper use of the loans granted. Sometimes it may happen that capital does not of itself flow in sufficient quantities to mortgage investments because of the inadequate returns offered. However, in such cases the State considers it necessary to intervene by facilitating the obtaining of the necessary credit, as the proper utilisation of the soil is a matter of fundamental importance for the country. Sometimes the State itself then furnishes the capital, or it uses its influence with the banks to make such capital available, or alternatively it may contribute towards the interest payments or grant privileges or other special advantages.

(to be continued)

G. COSTANZO

INTERNATIONAL CHRONICLE OF AGRICULTURE

ESTONIA

In the past two years there has been an increase in the value of the agricultural production; official statistics show a value of 164 million Estonian crowns for 1936-37 (year ending October 1) and 194 million for 1937-38. The statistics for 1938-39 are not available, but the figures for the value of agricultural exports suggest that the rise has continued.

The total value of the foreign trade of Estonia was smaller in 1938 than in 1937, exports having declined by 2 per cent. and imports by 3 per cent.; but agricultural exports considered by themselves have increased in value.

Value of Agricultural and Industrial Exports.

(Million crowns)

	1937	1938
(1) Agricultural products	48.8	54.3
thereof:—		
Butter	22.5	25.1
Live animals	4.0	7.8
Flax	6.8	6.1
(2) Industrial products	40.0	38.3
thereof:—		
Paper and raw materials therefor	10.7	12.1
Textile goods	10.8	9.0
Woodworking products	5.1	4.7
(3) Timber products	15.4	9.0
(4) Other products	1.8	2.3

In the first eight months of 1939 the trend of the total foreign trade turnover was upward. The rise in the value of agricultural exports continued and was now coupled with a rise in the value of industrial exports, particularly shale oil, benzine and cotton yarn.

The greater value of agricultural exports in the first eight months of 1939 compared with the same period of 1938 is mainly to be attributed to increased volume. The value of butter exports rose from 16.9 to 17.1 million crowns; of live pigs from 4.1 to 6.7 million crowns and of flax from 4.6 to 6.6 million crowns.

Foreign trade policy.

During 1938 and 1939 trade agreements have been renewed with a number of countries. The new agreement with Germany is of special importance for agricultural exports as it permits larger sales of live pigs to Germany.

The most important markets for live pigs are Germany and Russia, both of which countries are taking large quantities. The bacon exports are entirely absorbed by the English market.

Eggs, butter and flax go equally to Germany and the United Kingdom.

The export of certain products is in the hands of export organisations. The Estonian meat export society, *Lihakспорт*, for example, possesses the exclusive right to export meat, livestock and raw hides. Its business has been expanding. Certain exports are, in addition, now subject to Government control. In 1938 the Government took control of raw hide exports, and in 1939 of starch exports.

The import of a large number of important commodities is now regulated by the Committee of Foreign Trade. This Committee, which was set up at the end of 1938, consists of representatives from the Ministries of Economics, Agriculture and Foreign Affairs, the President of the Bank of Estonia and members of the Chambers of Agriculture, Trade, Industry and Co-operation. The Committee has authority to arrange that Estonian imports shall come from countries that purchase from Estonia, and also to advise exporters to restrict shipments going to countries from which purchases are for some reason or other hampered.

Regulation of agricultural prices.

The policy of fixing guaranteed producers' prices for *butter* and *eggs* on the basis of production costs which was begun several years ago has been continued in the past two years. As a result of this policy, farmers received in 1938 a higher average price for butter than in 1937, despite a slight fall in prices on foreign markets. An important change in the fixing of egg prices was introduced by a new law (1938). This provides that prices are to be regulated throughout the whole year instead of in the summer only, and allows the possible supplementing of the price regulation fund through the State budget. Till now summer prices were supported only out of sums deducted from the amount obtained in times of high prices and paid into the fund by exporters. Price regulation throughout the whole year, which takes into account higher costs of production in winter, has resulted in an increase of the volume of egg exports and the extension of the export period to the winter months also.

Measures for the regulation of agricultural production for home consumption are also in operation. The production of *wheat* and *rye*, for example, has been regulated in various ways. The Government once a year fixes rigid prices at which a special organisation shall purchase such quantities of home grown wheat and rye as the farmers may offer. The area under wheat has, however, continued to expand to such an extent that the production of wheat seemed likely to exceed home consumption. To check this and to prevent the extension of wheat production to less productive areas the Government at the time of the spring sowing of 1939 advised growers not to increase areas sown to wheat. Then in the autumn of 1939 it changed the relationship between the prices of wheat and rye in favour of rye.

Development of production.

In order to increase the area of natural grasslands there has this year been an extension of the premiums for bringing into use virgin land, which still exists in large areas. In the last four years 47,355 hectares of land, including no less than 20,505 hectares in 1938, have been brought into use. The premium paid amounts on an average to 30 Estonian crowns per hectare and may, according to the amount of work involved, be raised up to 60 crowns per hectare. According to the programme of the Chamber of Agriculture, which is the chief institution supervising land improvement, within the next 30 years about 1,000,000 hectares will be converted into cultivated meadows and pastures. As this plan is gradually brought into operation a steady

increase in cattle products may be expected. A great number of machines have been used in land improvement; the number of tractor stations has increased from 300 in 1938 to 400 this year, 1939.

The work of cattle inspection societies has greatly expanded. The number of cows under permanent inspection in 1934 was 9.4 per cent. and in 1938 increased to 14.2 per cent. of the total cow population, and further growth is assured by the activities of the existing training schools for cattle inspectors.

Government loans for farm machinery.

Government loans at the specially low rate of 3.5 per cent. were granted this year, 1939, for the acquisition of tractors, sowing machines and potato-diggers and have been extended to purchases of hay- and grain-harvesting machinery. These loans have been extensively used and have greatly furthered the present process of mechanisation of farm production. Mechanisation problems are being given special attention by the correspondence department of the Chamber of Agriculture. Combined mowing and threshing machines were first introduced in the past year and are now in use on five or six farms.

Limitation of the splitting-up of farm holdings.

As it was considered that excessive parcelling of land lowers the farmers' standard of living and leads to waste of labour on farms, a law was passed in 1939 prohibiting excessive partitioning of farm holdings. Under this law the creation of holdings of less than 10 hectares is permissible only in exceptional cases, while in case of partitions the remaining farm area must not be less than 20 hectares. On the other hand the foundation of homesteads for farm labourers, covering an area up to 0.5 hectares and not destined as self-sufficient farm units, is encouraged.

Farm labour.

A new law concerning the regulation of agricultural employment was passed in 1939. The former law, though in some respects having a wider scope, had not found practical application on many farms. According to the new law only the minimum time of rest is to be fixed by law, while the actual length of working time is to be agreed upon, in a written contract, between farmer and worker, according to the kind of work, time of year and the condition of the farm. The legal minimum time of rest is seven or eight hours at night according to the season, a two hours' rest during the day, if work continues for ten hours, and two intervals of a total of four hours if work continues over ten hours. In the case of children, so far as their working is permitted, the above stated intervals are longer by one hour respectively.

To encourage farm hands to do better work and to stay on the land for longer periods, the Chamber of Agriculture, with the support of the Government, began in 1939 the payment of premiums to qualified workers. Premiums were awarded the year, 1939, to 400 persons.

To promote the establishment of permanent homes for farm hands, the Government has granted this year, 1939, a long-term loan, free of interest. In the case of workers with large families the loan is cancelled to an extent determined on the basis of the number of children. Agricultural workers who have built houses (conforming

to the conditions set up for obtaining loans) at their own expense will receive a subsidy of up to 25 per cent. of the amount of the loan to which they would be entitled.

The general shortage of farm hands has called attention to the problem of agricultural labour which has temporarily been overcome by enlisting workers from Poland. Their number in 1939 was 4,500.

NETHERLANDS

The general economic situation in the Netherlands has been favourable in recent years, though the position of agriculture was less satisfactory, especially in 1938-39. This is shown, amongst other things, by the farm accountancy figures for the province of Friesland, one of the most important and progressive provinces. This province may be divided into four districts: 1. Grazing lands on clay soils; 2. Grazing land on peaty soils; 3. Grazing land on sandy soils; 4. Mixed farms on clay soils. The figures below, which refer to the last three farm accountancy years (May 1 to April 30), are calculated in florins per hectare.

	Gross return	Farm expenses (1)	Difference	Farm rent or corresponding value
<i>1st District:</i>				
1936-37	314	163	151	71
1937-38	353	182	171	77
1938-39	331	188	143	85
<i>2nd District:</i>				
1936-37	272	139	133	69
1937-38	319	158	161	72
1938-39	290	165	125	78
<i>3rd District:</i>				
1936-37	288	166	122	60
1937-38	327	190	137	65
1938-39	304	199	105	69
<i>4th District:</i>				
1936-37	370	211	159	75
1937-38	395	233	162	81
1938-39	379	243	136	86

(1) Including an allowance calculated for children working on the farm who have come of age, but excluding an allowance for the farmer and excluding taxes.

Thus in recent years expenses have risen in all cases, while the gross return, after rising in 1937-38, fell again in 1938-39. In fact the difference between these two is even smaller than in 1936-37. Other information respecting the year 1938-39 confirms the impression that agriculture is again depressed.

The prices of rye, the main product of the sandy soils, scarcely reached the minimum prices aimed at by the Government during the most important marketing period. Exports of edible potatoes, one of the principal products of the maritime clay soils, were only half that of the preceding season, which naturally had a big effect on prices

The prices of flax fibre, on the other hand, though still rather low, were a little higher than in the preceding year. The prices of sugar, and therefore of beet, increased to such an extent that the special tax for the agricultural crisis fund had to be reduced, commencing May 22, from 30 to 20 per cent. of the ordinary duty. Winter crops suffered greatly from the serious frosts of December 1938, and a very large part of the cultivated area had to be ploughed and sown again in the following spring. Clearly these factors operated very unfavourably on the gross return from arable crops. Horticulture too suffered from the cold, and particularly nurseries and floriculture. The output of fruit was good but insufficient to compensate for the low prices. Prices of market garden products were also very low.

Cattle- and pig-raising, the most important branches of agriculture in the Netherlands, suffered seriously from foot-and-mouth disease. The price of pigmeat was almost always considerably lower in 1938-39 than in the preceding year. Exports and therefore prices of eggs were satisfactory.

In short, despite the assistance given to agriculture by the 1933 agricultural crisis law, the economic situation remained rather unsatisfactory. As regards the special measures taken from September 1939, they cannot be considered as measures in favour of agriculture, but only as regulations to enable production to be carried on in exceptional circumstances.

Trade policy.

The Netherlands have continued to move away from the principles of free trade which was the basis of their commercial policy for about 80 years. The law modifying the 1934 law, which gave the Government power to alter the customs tariff, came into force on January 7, 1939 ⁽¹⁾. By this law the Government may impose or alter a duty with immediate effect and for a period of not more than 6 months, with a view to increasing the State revenues or of giving limited protection to Dutch industries. In the 1934 law this power was confined to the case of a national industry threatened with ruin. An increase in the number of tariff duties was imposed by Royal Decree as from March 1, 1939 ⁽²⁾. This measure was taken to increase the difference between duties on raw materials and semi-manufactured goods on the one hand, and manufactured goods on the other. Several new commercial agreements were concluded, but generally these only succeeded in mitigating certain restrictions imposed abroad on agricultural exports from the Netherlands, no new markets being opened up.

The trade agreements between the United States and the United Kingdom and the United States and Canada have reduced certain duties, from which the Netherlands will benefit owing to the most-favoured-nation clause.

At the end of last August, when war had become imminent, the Government took preventive measures to assure national supplies, by prohibiting the export of numerous products. The measures were based on the law of August 3, 1914, later modified, on exportation in case of war, or danger of war. To avoid restricting trade too much, prohibitions were at first applied only to industrial products. As regards exports of agricultural products, they are regulated by the intermediary of various centrals which apply the measures based on the 1933 agricultural crisis law. These centrals have had

⁽¹⁾ *Staatsblad* 1938, No. 411.

⁽²⁾ *Nederlandsche Staatscourant*, February 27, 1939. No. 41.

to cancel agreements which allowed the exportation of products in which they deal; and to replace them, if necessary, by new ones. Further, honey and other products of apiculture, cocoa beans and kernels, hay and straw, tea, coffee, cheese-rennet and casein, were declared agricultural crisis products ⁽¹⁾. All the agricultural crisis products, which now means practically all agricultural products, may be imported or exported only by the various centrals or with their special permission. Export of the following products of interest to agriculture has been forbidden in virtue of the above-mentioned law of August 3, 1914: wool, flax fibre; natural and artificial nitrate of soda, calcium cyanamide, all other chemical fertilizers, skins, hides and leathers; wood cellulose and all types of wood; bones, animal droppings; natural rubber, latex and regenerated rubber, balata, guttapercha; cinchona bark. Export permits must be granted in these special cases by the Crisis Export Bureau (*Crisis Uitvoer Bureau*) which was already in existence to regulate the export trade with countries which had applied quotas to imports of Netherlands products.

On September 12 the law on imports in time of danger came into force ⁽²⁾. By this law imports of goods indicated by the Government are forbidden unless provided with a special permit from the Minister of Economic Affairs, or his representative. To regulate such imports a new organization has been set up, the General Netherlands Central for Imports (*Algemeene Nederlandsche Invoer Centrale*).

Market and production policy.

In view of the international situation the Government at the end of September 1938 put forward eleven bills which became law. Six of them referred to agriculture. Some of them were later replaced by other laws passed after more thorough study of their consequences. The principal are described below together with the measures taken to put them into effect.

The 1939 law ⁽³⁾ on agricultural production makes it possible to prescribe methods etc. both general and detailed, for arable farming, horticulture, fruit-growing, forestry, the cultivation of meadows and grazing lands, the raising of live stock and poultry. Further, orders may be issued as to the use of the land.

The Government did not at once issue precise instructions regarding the development of agriculture. It realises the necessity under present circumstances of some degree of autarky, but does not wish to alter the agricultural system too radically, hoping that later on the Netherlands will again be called on to supply high quality products to the great industrial centres in neighbouring countries. It has therefore confined itself to making the following proposals: Grazing lands which, owing to their position, nature, etc. give grounds for expecting that they would give good returns as arable will be ploughed up and used for this purpose. Persons making such a change-over will receive larger quantities of concentrated feeding-stuffs if they cultivate cereals on their new arable fields. Potatoes and other hoed plants harvested on these new fields for family consumption will not be claimed for general marketing (see below). If the area converted under these conditions is insufficient conversion will become compulsory.

⁽¹⁾ Royal Decree, August 28, 1938, No. 38, and ministerial order of the same date, *Nederlandsche Staatscourant* No. 167.

⁽²⁾ Law, of September 9, 1939. *Staatsblad* No. 639 R.

⁽³⁾ Law of June 24, 1939. *Staatsblad* No. 632.

The preparation of new grazing lands, whether artificial or permanent, will only be permitted on condition that an equal area of grazing land is ploughed up. Only the cultivation of products which supply human or animal food will remain free. Crops of other types will be subject to special permits.

Another series of measures relates to excessive prices and the distribution of available supplies. These measures are based on the 1939 law on distribution ⁽¹⁾ and the 1939 law on excessive prices and cornering ⁽²⁾. The first gives the Minister of Economic Affairs the power to regulate the quantities to be distributed, in agreement with the Minister of National Defence as regards the quantities which must be retained for the troops. The use, consumption, preparation, processing and transport of goods dealt with in this law may also be regulated. Further, detailed inventories may be required. The second law refers to all movable goods, the Minister of Economic Affairs having the right to prescribe the limits of sale and hire prices of these goods, and the prices of services. The law also forbids excessive prices even for goods and services for which no decision has been published.

Immediately after mobilization an inventory of all agricultural products, stock and fodders was carried out, independently of where they were situated. Later, another inventory was taken for chemical fertilizers, but this did not include farmers' stocks for their own farms.

A special Bureau for the Purchase of Cereals (*Graan Inkoop Bureau*) was set up under the Netherlands Central for Arable Land. This office buys human and animal foods from abroad. If necessary the supervision of the wholesale trade for all articles for which it takes place will in time of war be in the hands of this supply office. This office will also regulate the wholesale prices of agricultural products. Distribution between the consumers is dealt with by the Central Distributing Bureau (*Centraal Distributie Kantoor*), a body which is in close touch with the retailers' organization. Such distribution will take place not only in case of scarcity but also whenever there is danger of cornering.

At the beginning of October an order regulating the distribution of chemical fertilizers (except for those with a calcium base) came into force. Their sale and supply are henceforth limited to persons registered with the Chemical Fertilizers Distribution Office. Farmers will only be allowed to buy fertilizers by means of special coupons.

Regulations have been drawn up fixing the quantities of concentrated feeding stuffs for cattle allowed to the farmers. By the law on distribution, the transport of these fodders is prohibited; but this prohibition does not apply to the quantities allowed to the farmers.

Cereals. — The protection of wheat, based on the compulsory employment of a certain percentage of Netherlands flour for bread making, has been dealt with in the preceding Chronicle. As a consequence of the serious losses caused by the frosts of December 1938 the fixed price at which this wheat is sold was increased from fl. 10 to fl. 11 per quintal.

The position as regards rye is very involved. On the one hand the difference between the prices of rye and wheat is greater than before the crisis, on the other hand the price of rye for feeding pigs should be as low as possible. For these reasons the premium on rye denaturation was reintroduced in September 1938, so that denatured (coloured) rye does not pay a monopoly tax on import higher than that on maize. On July 31,

⁽¹⁾ Law of June 24, 1939, *Staatblad* No. 633.

⁽²⁾ Law of June 24, 1939, *Staatsblad* No. 634.

1939 a whole new system of measures was introduced by which it was sought to achieve the same result—a basic price of 7.35 fl. per quintal. In connection with the war however, this system was also abolished, all rye having henceforth to be supplied straight to the Government who will pay 8 fl. per quintal until December 15. The farmers, who were accustomed to employ rye for feeding their livestock are allowed to acquire corresponding quantities of mixed fodder; this is however more expensive and so to prevent losses on the part of these farmers they will be paid an additional 1 fl. for each quintal exchanged in this way. Fixed prices have also been introduced for other cereals: spring barley 8.40 fl., winter barley 8.00 fl., oats 7.00 fl. Towards the middle of October all these prices were raised by one florin, with retroactive effect, but the supplement to rye growers will no longer be paid.

The growing of oats will be limited to $\frac{1}{5}$ of the arable area of each farm, thus making further lands available for products more necessary to the country under present circumstances. This measure will not affect the oats trade, because the quantities dealt with commercially come from regions where the crop covers less than $\frac{1}{5}$ of the arable area.

Potatoes. — Before September 1939 the system employed aimed at maintaining the prices of edible potatoes at a remunerative level, by paying premiums on the denaturation of quantities unsalable at the prices required. These premiums were financed from a tax of 50 fl. per hectare payable by potato growers. The tax was therefore to be considered as a premium to ensure a remunerative price.

Now another system has been introduced. The Government will buy potatoes of certain varieties for delivery in April 1940. A slightly lower price is guaranteed for quantities of the same varieties sold by the growers before this month. When this price is not received in the free market a premium will be paid on denaturation to assure the growers a normal price. A denaturation premium will be paid immediately for other varieties of potatoes. Fixed prices are also guaranteed for potatoes for sowing if accepted as such.

As regards potatoes for starch production the restriction on the area which may be cultivated has been maintained. The Netherlands Central for Potato Starch gives a subsidy on manufacture thanks to which a price of 9.75 fl. per quintal of starch was guaranteed. Towards the middle of October this price was increased to 10.75 fl. The Government also bought large quantities of starch, of which it has made available 200,000 bales at a price of 6.25 fl. per quintal. This starch is employed in conjunction with cereals for concentrated feeding stuffs.

Legumes and fine grains. — For many products fixed prices have been established at which the Government is prepared to buy any quantities offered to it. Amongst these products are included different types of dried peas and of kidney beans, as well as rapeseed-, caraway-, mustard, canary-seed, linseed and broad beans.

Sugarbeet. — At the beginning of hostilities the restriction of the area on which a product with a guaranteed price could be grown still existed. Later, however, it was decided to pay the guaranteed price for any quantities of sugarbeet offered to the sugar factories. Also, growers were expressly forbidden to convert sugarbeet or give it to livestock, except where they could prove that they had supplied the sugar factory with the quantity for which the guaranteed price had been promised.

Bulbs. — In this branch of cultivation measures had already been taken to place the improvement schemes in the hands of the interested parties themselves (¹). Henceforth they will have the power to issue growing permits, and will see that these are employed. They will also supervise bulb diseases.

Stockraising and dairy products. — All farmers are forbidden to raise more than a certain number of calves. In 1938-39 farmers whose cattle sheds were free from tuberculosis were allowed to raise calves in excess of the number prescribed. Another measure taken to maintain the prices of meat, was the purchase by the Netherlands Stock-raising Central of a certain number of animals. The prices of dairy produce were increased in favour of the farmers by premiums financed out of a consumption tax on butter which is paid back on export. Thus the wholesale price within the country consists of the basic price (fixed each week at Leeuwarden by a special commission) and the tax. In past years the total during the winter was about 1.45 fl. per kilogramme and during the summer about 1.30 fl. Thus when the price rises the tax is reduced and *vice versa*. As a result of the precarious position of stockraising (see above) and of the increase in the prices of certain fodders, it was decided about the middle of October to increase the winter price to 1.60 fl. To maintain a normal relationship between the prices of other edible fats and those of butter taxes were also imposed on the former. The tax on margarine has now been increased, although the unemployed and other needy groups receive sufficient supplies of margarine free of tax.

Considerable quantities of casein for the production of artificial wool are obtained, and this enables the output of concentrated skimmed milk and cheese from skimmed milk to be reduced.

Other branches of agriculture. — The measures taken in recent years have not been seriously modified. We hope to deal with them again in the next article on the Netherlands in this Chronicle.

Farm lease law.

The farm lease law, which came into force on November 1, 1938, has given satisfactory results. There are however still certain difficulties to be overcome; for example, when too high a lease has been offered a reduction is sometimes obtained such that the sum henceforth to be paid is below that offered by other prospective tenants; the decisions taken by the special chambers, set up under the cantonal tribunals still sometimes vary from place to place, etc.

Drainage of the Zuiderzee.

Steady progress is being made in draining the Zuiderzee. The greater part of the reclamation work on the first polder is completed, a considerable number of farms have been leased out, villages have been built and the poorest lands have been planted out for afforestation. The construction of the dikes of the second polder is now in progress, and at the same time canals are being dug in the land still under water, the excavated soil in so far as its quality is good being brought to other places under water where the upper layer of soil is at present poor. Special works are being carried out in regard to the shifting of the mouths of the Yssel.

(¹) *Nederlandsche Staatscourant*, No. 147 and 148, July 31, and August 1, 1939.

Special measures for small farms.

The special service for small farms has already improved their position considerably. In this case, contrary to the usual principle of measures to mitigate the effect of the crisis, subsidies are given which are not related exclusively to output, but which take account of the peculiarities of the individual farmer. The small farmers, who benefit less from the general measures of assistance, receive direct subsidies, partly in money and partly in factors of production such as fertilizers, feeding stuffs, etc. on condition that they carry out the advice of a special body of inspectors.

Agricultural co-operation.

The Central Bureau of Statistics has recently published a study of co-operation in the Netherlands (¹). The following information, which relates only to agricultural co-operation, is taken from it.

It should first be noted that many co-operatives lack the legal form of co-operative societies. For example, more than 60 per cent. of sugarbeet is converted into sugar in 6 factories of which the shares—for legally these are joint stock companies—belong to the growers. Nearly 90 per cent. of the potatoes for starch manufacture are treated in the 16 factories which belong to farmers. Many also of the credit and buying co-operatives lack the legal form of co-operative societies.

In 1937 the buying co-operatives supplied 61.3 per cent. of the consumption of concentrated animal feeding-stuffs, estimated at 1,650,000 metric tons, and 64.5 per cent. of that of artificial fertilizers, estimated at 1,280,000 metric tons.

The greater part of these products is not bought by the co-operatives from the merchants directly, but through the medium of the Central Bureau, which was formed from a former agricultural association. This co-operative organization has the highest turnover for dealings in these products in the Netherlands. It does not confine itself to buying only on behalf of its members, but also sells cereals for them. It owns silos to store the cereals, clean them, etc. so that it can sell at the most suitable moment. It operates a mill, an establishment for drying alfalfa, a farm for seed grain and an institute for the study of modern methods of feeding livestock, etc. In 1937 the Central Bureau covered about 520 associated co-operatives which together had a membership of about 65,000. The turnover in 1937-38 was 56 million florins.

In 1937-38 the dairy co-operatives dealt with 76.7 per cent. of the milk converted industrially and 82 per cent. of the creamy butter was produced by them. The proportion exceeded a half for all other products with the exception of whole milk powder (10.7 per cent.) and condensed skimmed milk (44.8 per cent.). There are 482 dairy co-operatives with 126,619 members and 6 selling co-operatives, the members of which are dairy co-operatives. Co-operative slaughtering has not yet made much progress in the Netherlands. In many cases small and medium farmers have also set up cereal threshing co-operatives, etc.

The selling co-operatives are very important. Those selling vegetables and fruits are generally members of the Central Bureau for the auctions, *Veilingen*, of horticultural products. In 1937 the value of their sales of these products amounted to nearly 65 million florins. In the same year more than a third of the eggs sold went through

(¹) *De omvang van het coöperatiewezen in Nederland, 1939.*

the hands of the co-operatives. Again, there are the fire insurance co-operatives, with 313,127 members (on January 1, 1938) and 2,094 million florins insured; the cattle insurance co-operatives and the co-operatives for insurance against hail.

Agricultural credit is centred on two central banks, one of which, situated at Utrecht has as its membership 729 Raiffeisen co-operatives, and the other, at Eindhoven, 568. There are also a few local banks not affiliated to these central banks. The work of the agricultural credit institutions has developed enormously in the 40 years or less of their existence; and although the savings deposited with these banks were greatly reduced during the first years of the agricultural crisis (when there was still no general system of protection for agriculture), there has been a considerable improvement since. The importance of agricultural credit is shown in the following table, where the total credit in 1938 of the 4 big commercial banks of the Netherlands is compared with that of the agricultural co-operative banks (central and local). The figures are in millions of florins ⁽¹⁾.

	Bills of exchange, debts and advances	Deposits, credits and savings
4 big commercial banks	322	684
Agricultural co-operative banks	326	507

⁽¹⁾ *Economisch-statistische Berichten*. June 14, 1939.

AGRICULTURAL CREDIT: ITS ORGANISATION AND NEW TENDENCIES

(*continuation*) ⁽¹⁾

SUMMARY: 4. *Conditions under which agricultural credit is granted:* (a) Interest rate: Necessity of adapting the rate to the special conditions of agricultural production and to the returns of the farms. Necessity of differentiating according to the nature of the credit operations. Interest rates immediately after the War and after the economic crisis. Present rates in various countries. Special measures against usury. (b) Guarantees: Necessity of serious guarantees in order to safeguard the lending institutions. Personal credit and real credit. Different sorts of guarantees for different types of credit. Position in various countries of guarantees for loans. — 5. *Agricultural credit institutions.* Importance of the co-operative credit movement. Different systems of the organisation of agricultural credit and different types of central financial institutions. General tendencies in the development of the forms of agricultural credit. Tendency towards specialisation amongst agricultural credit institutions. Tendency towards the creation of central agricultural credit institutions. Tendency towards increasing state intervention in agricultural credit. Tendency of issuing banks to finance agriculture.

II. *International Organisation of Agricultural Credit:* Loans granted to certain agricultural countries of South-Eastern Europe by the financial committee of the League of Nations. The Bank of International Settlements. Steps taken by the League of Nations for the creation of an International Agricultural Mortgage Company. Steps taken by the International Institute of Agriculture for the creation of an International Bank for Short-term Agricultural Credit.

4. Conditions under which agricultural credit is granted.

THE INTEREST RATE.

The price of money in its character as an essential element of the cost of production is very important in every financing operation, but especially so in agriculture.

When considering the financing of agricultural undertakings it was remarked that if the capital invested in agriculture admittedly in general enjoys greater security than that invested in industry and commerce, the returns on the other hand are also usually lower. This is evidence of the fact that the agriculturalist is not able to pay an interest rate as high as that which is generally required.

⁽¹⁾ For the first part of this article see the November number of this *Bulletin*.

The interest rate on loans must be adapted ⁽¹⁾ to the special conditions of agricultural production and to the yields offered by the agricultural undertakings. Credit must be organised so as to assure as far as possible the profitability of the expenses incurred by its aid. But the price of money must adapt itself not only to the family farm earnings, but must also vary according to the nature of the credit operations.

Now in the agriculture of several countries, if one considers the interest rates charged in the immediate post-War years, and in the years after the economic crisis, one notices that in general they were too high and out of proportion with the returns of the borrowing undertakings. Hence if the volume of indebtedness at this time constituted a problem in itself, the interest rate at which most of the debts had been contracted constituted another and equally difficult problem.

Subsequently, however, the situation was somewhat improved owing to the measures adopted by governments to reduce agricultural indebtedness and to other economic and monetary factors. Hence by 1937 and 1938 the long and short-term credits were indeed not so very burdensome. Certainly the variations in the interest rates have not been the same in all countries, but in many cases they have been in a downward direction. The official discount rates of the central banks in especial have shown a marked tendency to decline ⁽²⁾. This tendency is all the more significant as it has shown itself in a certain number of agricultural countries where loans and direct discounts to the public by the central bank are frequent, and where consequently changes in the discount rate of this bank have direct and important repercussions on the price of credit. From 1929 to 1938 the average annual official discount rate of the central bank has fallen from 4.35 to 2.61 per cent. in Belgium, from 5.12 to 4 per cent. in Denmark, from 7 to 4 per cent. in Finland, from 3.50 to 2.76 per cent. in France, from 7.11 to 4 per cent. in Germany, from 7.60 to 4 per cent. in Hungary, from 6.79 to 4.50 per cent. in Italy, from 5.48 to 3.29 per cent. in Japan, from 5.13 to 2 per cent. in the Netherlands, from 5.57 to 3.51 per cent. in Norway, from 8.64 to 4.50 per cent. in Poland, from 4.74 to 2.50 per cent. in Sweden, from 3.50 to 1.50 per cent. in Switzerland, from 5.50 to 2 per cent. in the United Kingdom, from 5.16 to 1 per cent. in the United States.

By way of example we give the interest rates for agricultural loans prevailing in certain countries. The rates vary mainly according to the nature of the economy of the country in general and its monetary policy in particular.

In Germany the interest rates for personal credit within the organised credit market reaches an average of 4.5-5.5 per cent. Uniformity in the fixing of interest rates has been assured by means of an agreement between the different groups of banks. For special purposes such as the purchase of fertilizers the rate is still lower, being somewhere in the neighbourhood of 4 per cent. Similarly

⁽¹⁾ LOUIS TARDY: *L'adaptation du crédit agricole aux besoins spéciaux de l'agriculture*. Report presented to the XVIIIth International Congress of Agriculture at the Hague, June 16-24, 1937.

⁽²⁾ *Monetary Review. Money and Banking*. 1938-39 Vol. 1, League of Nations, Geneva, 1939.

for credit based on real property, again within the organised credit market, a single rate of 4.5 per cent. has been fixed for the debtors of land credit institutions. For undertakings which are in process of reducing their indebtedness the rate is 4 per cent. for mortgages suitable for the investment of trust funds ⁽¹⁾, and 4.5 per cent. for others. The other groups of institutions for the granting of credit based on real property have adopted this reduction of the interest rate to an average of 4.5 per cent. The rates are no higher than for the credits granted by private individuals, measures indeed having been taken to adapt the rates of the latter to those of the organised credit markets. It is estimated that the interest rate in private credit dealings does not generally exceed 5 per cent. In certain cases of credits contracted for meeting needs of urgent importance to the national economy the State helps towards the payment of the interest charges in order thus to facilitate the meeting of such needs. The chief group of such credits is that falling under the heading of "credits for the carrying-out of improvements", the rate for which as a result of State subvention has been reduced to 3 per cent.

In Belgium the National Agricultural Credit Institute (*Institut national de Crédit agricole*) grants loans guaranteed by agricultural privileges ⁽²⁾, a sort of mortgage on movable property, and by personal guarantees at a rate of 4 per cent. for loans below 20,000 francs and at 4.25 per cent. for loans above 20,000 francs. For mortgage loans the Institute charges a rate of 4 per cent. on loans not exceeding 20,000 francs, 4.25 per cent. for loans of 20,000 to 100,000 francs and 4.5 per cent. for loans of 100,000 to 150,000 francs. The Raiffeisen banks of the country charge an interest of 4.35 per cent. and their central bank grants mortgage loans at 5 per cent. to members of Raiffeisen banks and at 5.25 per cent. to non-members.

The Agricultural and Co-operative Bank of Bulgaria levies interest of 7 or 8 per cent. on loans to individuals and of 6.5 and 7 per cent. on loans to co-operative societies. The credit co-operatives in their turn grant short-term and medium-term loans at 7.5 and 8 per cent. respectively, whilst for long term loans based on mortgages they charge 7 per cent.

In the United States the Federal Land Banks in 1917 began to charge an interest rate of 5 per cent. in most states, which in 1921 was raised to 6 per cent. in all the administrative districts under the Farm Credit Administration. In 1928 the interest rate on new loans almost everywhere fell back to 5 per cent. In the four following years the rates rose once more, and in 1932 they were generally between 5.5 and 6 per cent. In July 1933 as a result of the Emergency Farm Mortgage Act and in view of the vast programme for the conversion

⁽¹⁾ By the regulations on agricultural debt reduction, in the case of every estate subject to the process of debt reduction the first step was to calculate the capital value of the revenue deriving from the estate, this constituting a limit to its indebtedness. The funds of minors could be invested in such estates to an amount not exceeding two thirds of the capital value.

⁽²⁾ For an explanation of "agricultural privileges" see pp. 531-2.

of debts the interest rate was once again reduced. The accompanying table gives the interest and discount rates charged from 1933 to 1939 by the various institutions operating under the supervision of the Farm Credit Administration.

Interest and Discount Rates Charged in the U. S. A.: 1933-March 31, 1939 (1).
(Per cent. per annum)

Item	December 31						March 31, 1939
	1933	1934	1935	1936	1937	1938	
Federal land banks:							
National farm loan associations—contract rate (a)	5	5	4	4	4	4	4
Direct (including loans made in Puerto Rico)—contract rate (a)	5.5	5.5	4.5	4.5	4.5	4.5	4.5
Land Bank Commissioner (b)	5	5	5	5	5	5	5
Federal Intermediate Credit Banks (c)	3	2	2	2	2	2	1.5
Banks for co-operatives (c):							
Commodity	—	—	2	2	2	2	1.5
Operating capital	4	3	3	3	3	3	2.5
Facility	4.5	4.5	4	4	4	4	4
Production credit associations (c)	6	5	5	5	5	5	4.5
Emergency crop and feed loans	5.5	5.5	5.5	5.5	4	4	4
1934-35 drought relief loans	—	5.5	5.5	—	—	—	—

(a) On maturities occurring during the period between July 11, 1933 and June 30, 1935, the interest rate was temporarily reduced on loans made through national farm loan associations to 4.5 per cent. and on direct loans to 5 per cent.; on maturities occurring during the period July 1, 1935 to June 30, 1940, the rates have been temporarily reduced to 3.5 and 4 per cent. respectively.

(b) On maturities occurring during the period between July 22, 1937 and June 30, 1940, the interest rate on Commissioner loans has been temporarily reduced to 4 per cent.

(c) Interest rates in Puerto Rico, 0.5 per cent. higher.

In France the interest rates of the regional agricultural credit banks have been limited; the interest for long-term loans is fixed at 3 per cent., and a maximum rate has also been established for long- and medium-term loans.

The Agricultural Credit Bank of Greece charges rates of from 5 to 6.5 per cent. for the various types of loans.

In Hungary there is an official and uniform interest rate, the maximum rate for agricultural credits being 7 to 7.5 per cent.

In Latvia the interest rates on loans are as follows: 2 per cent. for the purchase of lands, 3 per cent. for the adjustment of inheritances by means of repur-

(1) Annual Reports of the Farm Credit Administration. Washington, D. C. — *Farm Credit Quarterly*, Vol. IV, No. 1, March 31, 1939. Farm Credit Administration, Washington, D. C.

chases by co-heirs, 2 per cent. for the construction of farm buildings, the carrying-out of land improvements and the installation of such services as electricity, water, etc., 2 to 3 per cent. for the purchase of live- and dead-stock, 4 per cent. for the conversion of short-term loans, etc.

In the Netherlands the Raiffeisen banks grant short-term loans at 3.75 per cent., whilst their central banks may also in certain cases grant long-term loans at 4 per cent.

The *Caixa Geral de Depositos, Credito e Providencia* in Portugal in 1938 charged rates of from 5 to 5.75 per cent.

In Romania the private banks give short-term credits at 9.5 per cent., whilst in the long-term credit institutions which work in conjunction with the State the rates are between 5 and 6.5 per cent.

In Yugoslavia short- and medium-term loans are granted at rates which vary between 5 and 10 per cent., whilst long-term loans pay interest charges of 6 to 8 per cent.

In order to prevent excessive interest rates some states fix maximum rates. Even so, however, a distinction is made between loans contracted in the organised credit market and those contracted in the free markets. In the former case the rates are lowered because of the action of the banks or the intervention of the public authorities; whereas in the free markets the price of money is often high and sometimes even usuriously so, especially when the banks lack capital and borrowers must of necessity have recourse to private individuals for the funds they need.

The co-operative credit organisations take an effective part in the struggle against usury, and in some countries special legal measures have also been taken.

In Bulgaria, for example, usury took two principal forms: loan on pledge of fields under crops, and the charging of high money interest rates, together with all sorts of illegal and fraudulent extra charges and increases in the amount of debts. Measures against usury were passed in 1880, 1893, 1902 and 1905. In 1927 a new law of April, 30 laid it down that "whoever in lending money on the security of cereals and other products exploits the debtor's difficulties in order to exact an annual rate of interest six points above the discount rate of the National Bank of Bulgaria shall be punished by six months' imprisonment and a fine of from 5,000 to 50,000 leva".

In Romania a royal decree was issued on May 4, 1938 on "the establishment of the interest rate and the suppression of usury". The legal rate of interest was fixed at 1 per cent. for civil dealings and at 2 per cent. above the discount rate of the National Bank of Romania for commercial operations, this legal rate of interest being valid whenever there is no special document stipulating the rate to be paid. Contractual interest rates may not exceed the discount rate of the National Bank of Romania by more than 4 per cent. Whoever in any civil or commercial agreement granting or prolonging a loan accepts or demands for himself or for some other person a higher rate of interest is guilty of usury, and will be punished by a period of imprisonment of from two months to two years and a fine of 10,000 to 30,000 lei.

In Hungary the law of June 1932 defines a usurious contract as one in which a person abuses the inexperience or the state of dependence of another party or makes use of his own position of confidence with regard to that other party in order to reap pecuniary gain for himself very much in excess of the value of his aid. All contracts of such a nature are declared null and void.

In Yugoslavia the Serb civil code provides for a maximum rate of 12 per cent. per annum, and consequently no interest payments above this rate can be recovered by legal means. The civil code valid in Croatia, Slovenia, Bosnia, Herzegovina and Dalmatia fixes the maximum rate at 6 per cent. except in the case of loans made against a pledge where 5 per cent. is the maximum rate allowed. The Montenegrin civil code allows an annual rate of 10 per cent. The Serbian civil code does not allow compound interest; but if the debtor does not pay the interest by the stipulated date the interest not paid may be added to the sum originally lent in the new contract, so that the interest for the following period is calculated on the resulting total. The ordinary civil code prohibits interest on interest, but the contracting parties may agree that the sum of the interest payments which are in arrears for not less than two years be included in the capital. The Yugoslav civil code of 1929, which is valid for the whole territory of the State, provides that whosoever obtains an exorbitant profit by exploiting the distress of another party shall be punished by imprisonment, fine and loss of civil rights.

However, in spite of all these efforts usury has not yet been abolished in the countryside. Indeed it is generally recognised that the more effective way to do so lies rather in replacing unorganised and uncontrollable credit by organised and controlled credit.

THE GUARANTEES.

In order to safeguard the position of the lending institutions and also so that the agriculturalists shall not be tempted to abuse the credit facilities available, it is desirable that loans be granted only against serious guarantees ⁽¹⁾. The granting of a credit means in effect placing at the disposal of the borrower a present wealth which therefore does already exist in return for a hoped-for future wealth which does not now exist and the hope for which may never be realised. Hence it is a matter of elementary prudence for the legislation to consider these risks and to provide measures suitable for dealing with them, for otherwise it will not be possible to provide the borrowing bodies, *i. e.* agriculture in general, with the capital which it needs. However, whilst recognising the importance of having guarantees based on real property, even in the interests of the borrowers themselves, it must be admitted that the chief guarantee will always remain the confidence felt in the character and ability of the borrower and is thus of a personal nature. Besides, the experience of the crisis years has shown that even a gua-

⁽¹⁾ TARDY, *op. cit.*

rantee based on real property may be of doubtful value. During the War and post-War years there was a tendency to ask for stronger guarantees, but during the economic crisis land and produce prices showed an unprecedented fall and the precariousness of even the best material guarantees became only too evident. Besides the new system of the planned economy and organisation of production have lessened the risks of agriculture. The prices of the main products are often fixed in advance at a level considered sufficient to cover all reasonable costs of production, and in any case price fluctuations are very much weakened. The result is that the guarantee offered to the lending institutions is more solid and reliable than was previously the case. Hence we should expect the conditions under which loans are granted to become less onerous, and this has actually happened in some cases.

The guarantee against which credit is granted may be either real or personal in nature.

Credit against a personal guarantee may rely on the position, character or ability of the borrower, or may be based on a guarantee offered by a third person or on mutuality.

A third person or group of persons may by the terms of a contract with the lender undertake to pay a debt if the borrower himself fails to do so. When a loan is made to a company the lender may require the loan to be guaranteed by all the directors or only by a certain number of them. Or again several persons may bind themselves to pay the same debt for the same debtor. The creditor then has several guarantees from each of whom he may, if necessary, require the payment of the whole debt. In such a case the creditor's security reaches the maximum possible, for each guarantor is as fully answerable for the debt as the borrower himself.

Finally mention must be made of mutual credit. The reluctance of the peasants and farmers to have recourse to banks, has given rise to the constitution of agricultural credit societies. Those organised under the Raiffeisen system are characterised by the joint and unlimited liability of the members for all debts of the society and by their territorial limitation.

The other guarantees are based on real property, consisting of mortgages or other pledges such as agricultural warrants, agricultural privileges, etc.

The agricultural warrant can be used in all countries where the agriculturalists are sufficiently advanced, failing which their use may prove too risky.

In Italy and Belgium, where the agricultural warrant does not exist, there does instead exist a guarantee known under the name of "agricultural privilege" (*privilegio agrario*, *priviège agricole*), which constitutes a sort of mortgage for movable property giving the lender a right of preference and a right to prosecute at law.

As regards the mortgage, it is generally held to constitute the best guarantee for medium- and long-term loans. The main point about it is that the land itself answers for the debt contracted, and that if the debtor does not honour his obligation the creditor can recoup himself from the land. The procedure of execution is much the same in all countries. On this point it should be mentioned that as a result of the agricultural crisis the right of distress has been intro-

duced for forced executions in many countries: forced sales of landed property were no longer possible or could only be carried out with difficulty.

We shall now turn to a closer consideration of certain countries as regards guarantees.

In Germany credit guarantees are represented by the transfer of the property rights in the pledged good (*Sicherungsübereignung*), by the pledging of produce (*Lombardierung*), by the right of pledge on fruits (*Früchtepfandrecht*), by the bill of exchange, by the guarantee by third parties (*Bürgschaft*) and by the guarantee of the State.

In the case of the *Sicherungsübereignung* the borrower must transfer to the lender the property rights of his movable goods, but retains the possession and use of such goods. The lender in his capacity of owner may then in case of retarded payment of the debt recoup himself by selling the goods in question. In the case of the *Lombardierung* the lender obtains a right of pledge, which allows him to sell the pledged object, provided that the conditions laid down by the civil code have been observed. The right of pledge on fruits was created by special laws aiming at providing the creditor with a right of procedure as against earlier creditors in the recovery of his debt; it is granted to the lender mainly in default of the existence of real property suitable for the *Sicherungsübereignung* or *Lombardierung*, and when the guarantee can only arise at a date subsequent to the granting of the credit and the sale of the possible fruits. The guarantee represented by the bill of exchange has as object to allow the lender to adopt as simple and rapid a procedure as possible against the borrower in case of delayed payment. In fact by German law the debtor of a bill of exchange is more strictly bound than an ordinary debtor, and he cannot raise any objections regarding the credit concerned for the reason that most often third parties also are answerable for the debt being equally bound together with the borrower. This form of credit guarantee also makes refinancing possible, which is of great importance from the point of view of the liquidity of the resources of the credit institutions. The endorsement accompanying the bill of exchange in fact closely resembles the responsibility of guarantors who have bound themselves to meet, if necessary, the creditor's claims on the debtor. The guarantee of the State is the surest type of guarantee which any credit can have; the State then declares its readiness, under certain defined conditions, to repay what is owing, such a promise generally being given in view of the economic importance of the credit in question.

The real property which serves as guarantee for a credit is most generally in the form of land. This guarantee is made much easier by a system of land books such as exists in Germany. All except certain State lands are registered in the land book kept by the courts, and no transfer can be effected except by a new registration. Owing to this publicity it is possible to use landed property as a guarantee for credits, the granting of any loan to the owner being in such case noted down in the land book. Consequently as long as the loan remains noted down as a charge against the land, the land cannot be alienated until the loan has either been repaid or taken over by the new owner.

According to the form of the guarantee a distinction must be made between mortgages and land charges. A mortgage presumes a credit granted generally

to the owner of the estate, and its amount depends essentially on the amount of the said personal right, whereas the land charge bears on the estate independantly of any personal obligation.

As regards the guarantee of a credit granted to owners of *Erbhöfe*, it should be mentioned that an ordinance of March 21, 1936 provides for the supervision, or when that is insufficient, for the management of the farm by some trustworthy person. In case of the loss of the title of *Bauer*, the former holder may also be deprived of the administration, the enjoyment and, in certain cases, even of the ownership of the farm. These measures assure the regular running of the farms as also the observance of contractual obligations.

In *Belgium* the law of April 15, 1884 allows the owner or tenant-farmer who wishes to obtain credit to use all or part of his farm stock as guarantee, without removal of such equipment, but giving the lender such rights over it as will ensure him of repayment; these rights are legally termed "agricultural privilege" (*privilege agricole*). If the farmer is not the owner of the land, he may give as pledge anything within the house or the farm buildings, such as the furniture, the linen, the household articles, etc., the season's crops and all crops stored in barns, the stores, the manures, the fertilizers, the hay, the farm animals, the agricultural machines and implements, etc. Whereas if the cultivator is himself the owner, he may in addition give as pledge a whole series of goods which will shortly become movable property, *i. e.* the plants and fruits still attached to the roots or hanging from the branches and even the movable goods considered as immovable under the civil code *i. e.* live-stock and machinery intimately bound to the farm (¹).

As regards *France*, we have already had occasion to show the importance of the agricultural warrant. Mention should, however, also be made of the "cession of crops in the ground" (*cession des récoltes pendantes*), which is also to some extent a sort of agricultural warrant because the goods remain in the possession of the borrower. In such a case the sum lent may be considered as adequately guaranteed so long as it does not exceed a certain fraction, usually a third, of the probable value of the crop. On the other hand, the loan is generally only granted within the four months preceding the harvest, and the lender can thus generally, except for unforeseeable eventualities, judge whether the circumstances are favourable. A new form of guarantee is the "guarantee pledge" (*engagement de garantie*) set up in France for the wine and alcohol producers by the decree-law of October 23, 1935. This obligation offers the lender a greater security, because the borrower cannot dispose of the wine or alcohol serving as guarantee before he has repaid the loan.

In the *United Kingdom* the law of August 3, 1928 gave recognition to the real guarantee under the form of a fixed or floating charge in agricultural short-term credits. This guarantee was unknown to the former English laws on agricultural credit. Under these laws the agriculturalist could only offer the credit institu-

(¹) R. NOEL: Le crédit agricole d'après ses garanties. *Défense agricole belge*. Brussels, April 29 and May 10 and 20, 1939.

tions from which he wished a loan either a personal guarantee or a guarantee backed by immovable property if he happened himself to be an owner. Under the new law, however, the agriculturalist may also offer as guarantee the produce and live-stock of his farm, but without such produce or live-stock having for that reason to leave the farm of which it forms a part. This guarantee is constituted after the style of the English *onus reale* under the double form of a fixed or floating charge; in the first case the charge is attached to one or more specified objects belonging to the undertaking concerned; in the second case the guarantee bears generally on all or on one or more categories of objects of the undertaking; in the first case the charge is a direct one on the object subjected to it, and the creditor may consequently demand that all sums received by the debtor be used to meet the credits; in the second case the charge is on the totality of objects and will under certain given condition, *e. g.* the insolvency of the agriculturalist, become a fixed charge. In any case the result to the debtor is a charge the same as that deriving from a fixed charge and the purpose of which is to devote to the extinction of the debt the sums which he may obtain by alienating the goods subject to it.

In *Italy* loans to meet ordinary running expenses find their guarantee in the produce of the current year. The law lays down that these loans are in a position of privilege as regards the uncut crops and crops of the year together with the wares in the buildings and houses attached to the farm and derived from it. This privilege is a legal right of preference which the lending body may set against whoever possesses, cultivates or manages the land in the year in which the repayment of the loan in whole or in part becomes due; if there are no crops or the crops prove insufficient, the privilege is carried over to the products of the following year on condition that the debtor continues to cultivate the land. This privilege takes precedence over all other claims except legal expenses, so that the credit of the lending institute must be paid even before the taxes and the rent.

In order to provide a better guarantee for the loans of which we have been speaking it is possible also to create (by agreement) a special privilege on the uncut crops and on the produce harvested during the year and on the stored goods of the debtor together with everything used to provide them; this privilege, however, must be limited to that part of the value of such produce and goods which is in excess of the amount of the loans benefiting from the legal privilege.

As regards *Italy* mention should also be made of the agricultural bill of exchange, not only as a form of working credit, but also as a form of guarantee. For all legal purposes this is considered as equivalent to an ordinary bill of exchange, but it must contain an indication of the purpose of the loan, of the estate to which it refers or of the place of keeping of the goods to be used, transformed or preserved, as also of the guarantees properly so called accompanying the loan.

Limitation of space regretfully compels us to omit further examples of the systems of guarantee, but we would wish to emphasize once again what was said in the beginning of this section, namely that the best guarantee of all really consists in the professional ability of the agriculturalist and in a more rational organisation of production and of markets. Above all it is necessary to combat

the activities of speculators and to assure the agriculturalists of remunerative prices, this alone making it possible for them to honour their engagements. Some risks could certainly be eliminated or at least reduced by a more rational organisation of agriculture. Governments nowadays do all they can to defend produce markets in order to make agriculture a less precarious source of livelihood and to stabilize the economic situation of the rural population.

5. Agricultural credit institutions.

Before the War of 1914-18 in many countries a considerable part of the capital needed by agriculture was provided by private lenders; but often such loans were granted under onerous conditions, especially as regards the rate of interest and the conditions of repayment, which did not fit in well with the conditions of agricultural production. Agriculturalists often became the prey of usurers, especially as the private banks had little or no interest in providing the agricultural classes with credit. Thus circumstances forced the peasants and farmers to organise separate agricultural credit institutions, and it is owing to the steady growth of such institutions that unorganised credit has been steadily declining in importance.

In this way there have arisen in many countries co-operative credit societies formed by agriculturalists and country dwellers which are able to offer guarantees based on the joint and several liability of their members. This is the guiding principle of the Raiffeisen system which has been widely adopted, naturally with the modifications necessitated by local conditions. To describe this system here would be superfluous; we will only mention that the rural banks, being territorially limited, are able to keep a watchful eye on each agriculturalist and thus to judge of the needs of their members. Also these societies are administered gratuitously which naturally reduces expenses, and so makes it possible for them to charge interest rates below those applying in the ordinary credit market.

The co-operative form of agricultural credit is almost everywhere considered as the best, so much so that the more important credit institutions rely to an ever greater degree on the co-operatives for the distribution of their loans. The banks realise that agricultural credit granted through the intermediary of the co-operative societies is more likely to be used for its proper purpose, and hence tend more and more to work in collaboration with such societies. The number of loans granted through them is indeed everywhere on the increase, and they now constitute the very basis of the whole system of agricultural credit in Belgium, France, Germany, Italy, the Netherlands, etc.

Statistics recently published by the International Labour Office ⁽¹⁾ and referring mostly to the year 1937 show that of 426,760 agricultural co-operatives

⁽¹⁾ Co-operative Societies throughout the World. *International Labour Review*, Vol. XI, No. 3, Geneva, August-September 1939.

existing in the world the largest group is that of credit co-operatives, which number 189,439. The 129,572 rural credit co-operatives about which we possess more detailed information cover about 17.5 million members. Most of these societies are to be found in Asia which accounts for 117,267, of which 80,915 are in India, 20,620 in China, 12,437 in Japan. In Europe such societies number 65,774, in America 5,933 and in Africa 465.

On December 31, 1938 there were in Germany (within the frontiers of that date) 45,930 agricultural co-operatives of which 20,573 were rural banks ⁽¹⁾. These figures suffice to show the special importance of this form of co-operation. These banks generally limit their activities to one or a few communes. In their financial organisation the central banks play a prominent part, these nearly all having the legal status of a registered co-operative with limited liability. Their traditional function is that of clearing houses. As such they receive the balances of deposits, administer them, and advance funds to affiliated societies.

In Belgium the organisation of agricultural credit has as its basis Raiffeisen banks to the number at the end of 1938 of 985. They are grouped and controlled by the Central Bank for Rural Credit (*Caisse centrale de Crédit rural*).

In Finland the rural banks numbered 1,235 in 1936, and they are affiliated to a central bank.

In France also co-operation, which is very widespread and takes numerous different forms, is at the very basis of the organisation of agricultural credit. There are in the country 5,800 local banks grouped into 98 regional banks. There are also other credit societies which do not apply for advances from the State, of which some are placed under the regime of the law of 1920 and benefit from the fiscal exemptions provided by this and subsequent laws, whilst others also called rural banks, are not subject to the 1920 law ⁽²⁾.

Greece in 1937 had 4,327 agricultural credit co-operatives.

In Hungary credit co-operatives in 1935 numbered 1,402, of which most were affiliated to the Central Credit Co-operatives' Bank.

In Italy there were at the end of 1938, 1,887 rural and artisans' credit banks and 489 communal agricultural credit banks.

In the Netherlands the number of Raiffeisen banks fluctuates round about 1,300. They are, almost without exception, affiliated to one of the two central banks, the *Coöperatieve Centrale Raiffeisenbank* of Utrecht or the *Coöperatieve Centrale Boerenleenbank* of Eindhoven ⁽³⁾.

In Romania the rural credit co-operatives in 1937 numbered 4,638.

In Switzerland the Union of Mutual Credit Banks in 1938 had 640 credit banks affiliated under the Raiffeisen system.

(1) *Jahrbuch des Reichsverbandes der deutschen landwirtschaftlichen Genossenschaften Raiffeisen*, 9th year 1938, Berlin, 1939.

(2) MADELEINE DEGON: *Le crédit agricole. Sources, formes, caractères, fonctionnement en France et dans les principaux pays*. Paris, Librairie du Recueil Sirey, 1939.

(3) See H. VAN HAASSTERT and G. W. M. HUYSMANS: *Veertig Jaren Landbouwcredit onder Leiding der Coöperatieve Centrale Boerenleenbank te Eindhoven, 1898-1938*, Roermond, 1939.

Yugoslavia in 1938 had 4,909 credit co-operatives and 3 central co-operatives⁽¹⁾.

Bulgaria in 1937 had 1,932 credit co-operatives⁽²⁾ and Turkey 663.

Sweden counted 816 credit co-operatives in 1937.

These figures suffice to give an idea of the development of the co-operative credit movement in the various countries.

Agricultural credit organisation is, moreover, characterised by the existence of a great variety of systems. In some states the agricultural credit mechanism is very old, whilst in others it has only been created within recent decades, or perhaps even only after the War. Furthermore in some cases we find ourselves dealing with an organisation which is so to say complete, all types of credit (short-medium- and long-term) being provided by distinct institutions. The problems of long-term mortgage credit and those of short-term credit are indeed so different and require for their handling such different types of skill that they are generally dealt with by separate institutions. In other cases, however, such specialisation does not exist. In the countries where the organisation of agricultural credit goes no further back than the present century the necessary institutions could be set up without the need of adapting them to the already existing institutions, and thus in such countries the resulting credit organisations tend to show a certain similarity to one another.

Several types of central financing bodies can be distinguished: public establishments, semi-public establishments, real State banks, free institutions, these latter generally taking the form of joint-stock companies or partnerships with limited or unlimited liability. These different bodies are constituted and function according to rules which cannot be easily classified or compared.

Nevertheless it is possible to discern certain general tendencies in the development of the forms of organisation of agricultural credit.

Thus credit institutions are tending to specialise. Ordinary banks, being purely commercial institutions, cannot always take account of the special conditions of agricultural production. The nature of their resources does not allow them to grant credits for a sufficiently long term. As their distance from the centres of agricultural production makes it difficult for them to judge of the solvency of agriculturalists, they are generally little inclined to grant an adequate credit. Hence the banks have proved more helpful to industry and commerce than to agriculture. The consequence of this state of affairs has been the creation of special institutions in favour of agriculturalists and adapted to their special needs. The question arose whether agricultural credit should be granted only to agriculturalists and solely to finance agricultural operations, or whether it might also be extended to other forms of country activity. Experience seems to show that it is preferable to have special banks of agricultural credit. However, in spite of the advantages of a credit system dealing only with people engaged in the same line of production, agricultural credit in some countries takes

(1) *Royaume de Yougoslavie. Statistique générale d'Etat. Annuaire statistique 1938-39.* Belgrade, 1939.

(2) *Annuaire coopératif 1937.* Agricultural and Co-operative Bank of Bulgaria, Sofia, 1939.

the form of rural credit available to any country-dwellers and allowing them to carry out operations which are not exclusively agricultural. Such is the case with the Raiffeisen banks in Germany which do not limit their activities to credit operations, but also engage in the buying and selling of goods and produce; whilst the people's banks in Italy deal in urban as well as rural credit, and the credit co-operatives of Hungary also have a wide sphere of activities.

Then too there is to be noted a tendency especially strong since the War of 1914-18 towards the centralisation of agricultural credit and in general towards the coordination of financial services, the central organisations themselves often being either State banks or semi-public bodies.

This tendency found official sanction in the United States by the foundation in 1916 of the Federal Farm Loan Board, which in 1933 became the Farm Credit Administration. After the interruption of the War of 1914-18, there arose in France in 1920 the *Office national du Crédit agricole* which later became the *Caisse nationale de Crédit agricole*. In 1921 Poland created the Agrarian State Bank, while in 1922 the State Land Bank was founded in Latvia. Japan set up her Co-operative Societies' Central Bank in 1923. In 1924 Portugal instituted the Agricultural Credit Board, the U. S. S. R. the Central Agrarian Bank at Moscow, and Turkey reorganised her Agricultural Bank.

In the period after 1925 this movement became even stronger. In 1925 there was instituted in Germany the *Deutsche Rentenbank-Kreditanstalt*, in Spain the National Agricultural Credit Service and in Yugoslavia the General Agricultural Credit Bureau which in 1929 was replaced by the Privileged Agricultural Bank. In 1926 Mexico founded her National Bank for Agricultural Credit and Estonia her State Land Bank. 1927 saw the creation in Italy of the National Consortium for Agricultural Improvement Credit and in Ireland of the Agricultural Credit Corporation Ltd. In 1928 the Agricultural Mortgage Loan Company was set up in the United Kingdom, whilst in the following year Greece instituted her Agricultural Bank. Egypt's Agricultural Credit Bank dates from 1931, and among the more recent creations may be mentioned Rumania's National Institute for Agricultural Credit and Belgium's similarly named Institute, the foundation of both these bodies going no further back than 1937.

As regards the causes giving rise to the development of these central banks, the following factors should be mentioned ⁽¹⁾. First of all there was the inflation from which most European countries suffered in the post-War period; this destroyed the money markets, and made the existing institutions unable to satisfy the credit needs of agriculture owing to the partial or even total destruction of their own capital. Hence attempts were made to provide new credit facilities for agriculture by the creation of central institutes well provided with funds. Another reason for their foundation consisted in the situation of the capital market which made it impossible for the existing agricultural credit institutes, at least

(1) HERMANN KISSLER: Die Grundlagen des Agrarkreditsystems in den verschiedenen Ländern. General report presented to the first International Congress on Agricultural Credit, Naples, October 18-23, 1938.

during the time of the agricultural crisis, to issue bonds. Hence it came to be thought that a central bank provided with a special guarantee might prove better able to attract capital than regional land credit institutions.

Now it should be noted that the resources of these central organs were generally either in whole or in part furnished by the State, either under the form of a participation in the original share capital or in the form of advances and subsidies. This financial aid by the public authorities naturally carries with it extensive powers of supervision over the activities of these banks.

Agricultural credit is more and more becoming an instrument of the State's policy as regards agriculture. The central agricultural banks are indeed often entrusted with the administration of State funds intended to aid in the realisation of projects of special interest to the State which would have been outside the scope of the previously existing organisation—projects such as the carrying out of large-scale improvement works, the bringing under cultivation of new lands, agrarian reform, the settling of refugees from abroad, etc.

Agricultural credit seems to be acquiring ever more the character of a public service, under the control of the State, this tendency being largely the result of the present movement towards planned economies.

Finally emphasis should be given to the tendency of the issuing banks to finance agriculture, either directly or by rediscounting agricultural bills of exchange. As refinancing bodies the issuing banks are everywhere to a greater or lesser extent engaged in agricultural credit operations, especially as regards credits given on the security of crops.

In Belgium the National Bank by virtue of the royal decree of August 24, 1939 has among its other functions that of rediscounting bills intended for the carrying out of commercial dealings such as the sales or purchases by agriculturalists of live-stock, agricultural material, fertilizers, seeds, crops and in general of all commodities produced by the agricultural classes.

In France specially noteworthy is the financial aid which the issuing institute has given to the resources of the agricultural mutual credit banks. This co-operation also takes place on a great scale as regards the discounting of bills and warrants and the making of advances on securities. By a simple deposit of securities anyone can obtain the opening of a current account. The rediscounting activities of the Bank of France have rendered great services to the financing of the wheat and wine crops. ⁽¹⁾

In Hungary till now the statutes of the issuing bank have only permitted the discounting of bills for a period not exceeding six months. But the statutes have recently been modified and now make a distinction between bills on agricultural merchandise and bills on agricultural production. The merchandise bill is issued either by the agriculturalist for supplies of merchandise or other necessities for his productive processes or by the supplier of such merchandise or necessities. The production bill on the other hand, which may have a duration

⁽¹⁾ *Les problèmes du crédit. I. L'organisation du crédit à l'agriculture.* Discussion of the National Economic Council in its session of March 28-29, 1938 and Report presented by M. Auboyneau. Melun, 1938.

of nine months, results from a credit operation whereby the agriculturalist has obtained the resources necessary to cover the advances used in the financing of production. The production bill is discounted by the issuing bank only if the financial institution presenting the bill also presents a form confirmed if necessary by the Chamber of Agriculture declaring that the credit has been granted for productive purposes and that the debtor is known to be a careful and solvent agriculturalist.

The Bank of Italy has granted institutes which finance compulsory wheat pools (*ammassi*) operations a rediscount of bills amounting at the end of 1938 to 1,274 million lire.

In Yugoslavia legislation had foreseen that large-scale aid by the National Bank would be needed for the financing of the national economy. Hence measures were adopted in 1931 by virtue of which the National Bank is allowed to grant credits on agricultural securities to the extent of one third of the totality of its bill-holdings.

In Romania the rediscounts of the National Bank are similarly one of the most important sources of funds available to agriculture. The National Bank also took part in the creation and working of the chief financial institutions, including amongst others the National Institute of Agricultural Credit founded in 1937.

The General Assembly of the International Commission on Agriculture which met at Oslo in July 1936 stressed the importance of securing the co-operation of the issuing banks in the organisation of agricultural credit. It is generally admitted that the rates charges for loans must be adapted to the special conditions of agricultural production. This rate varies with the price of money on the capital market which is itself influenced by the discount rate of the issuing bank. Hence all the more necessary does it become for a close contact to be maintained between this bank and the organisation of agricultural credit. In many countries indeed representatives of the central institution for agricultural credit take a share in the administration of the issuing bank. On this same subject the seventeenth International Congress of Agriculture held at the Hague in June 1937 passed a recommendation that "in each country the issuing bank should take account of the conditions of agricultural production and more particularly should grant special terms as regards the interest rate and period of duration for the discounting of bills presented by agriculturalists".

II. — International organisation of agricultural credit.

The difficulties created by the economic crises have shown the inadequacy of purely national solutions for the problem of agricultural credit and the necessity of a co-ordinated international effort. The idea of the transfer of capital resources from the richer to the poorer countries has been gaining ground, and a certain degree of internationalisation has even been realised in practice.

It has often been pointed out in international discussions how important it is both for industrial and agricultural countries that there should be a reduction in

the charges of agricultural production. Also it is recognised that lack of capital is one of the main factors preventing agriculturalists from changing their lines of production, reducing their production of crops of which the supply is excessive to increase their production of crops for which there is a growing demand. Furthermore there is a general recognition of the fact that all measures aimed at raising the standards of living where these are comparatively low must necessarily help to raise the demand for the more expensive products of agriculture in these same countries.

Based on these considerations several plans for a greater international co-operation have been worked out, and a beginning has even been made towards putting them into practice.

For example, some years ago certain agricultural States of South-Eastern Europe sought the help of the financial committee of the League of Nations in order to obtain a loan. The committee asked certain countries richer in capital to guarantee the repayment of the sums lent to the poorer countries ⁽¹⁾. So it came about that Czechoslovakia, France, Great Britain and Italy agreed to make loans to certain Danubian States, by taking on themselves the greater part of the risk of non-repayment.

These loans may be distinguished according as to whether their object is a general or a special one, whether the governments contracted it in order to try to improve their agricultural situation in general or whether they had in mind some special branch of their agriculture or some particular problem connected with it.

In August 1922 Austria made a request for a loan. Its repayment was jointly and severally guaranteed to the extent of 80 per cent. by the leading States and of 20 per cent. divided amongst other States. The proceeds of the loan were in part devoted to the reorganisation of agricultural credit.

Similarly in 1923 Hungary received an international loan, guaranteed, as in the Austrian case, by the receipts of certain sources of revenue, and also in part devoted to the reorganisation of agricultural credit.

The Bulgarian government contracted a stabilisation loan of £ 1,800,000 of which £ 500,000 were granted the Agricultural Bank of Bulgaria to allow it to reinforce its activities, and £ 150,000 to the Central Co-operative Bank.

In 1923 an international loan guaranteed by several mortgages and sources of revenue was granted to Greece.

But these public international loans were far from supplying adequate resources to the agriculture of the borrowing States, so that the central institutions for agricultural credit sometimes had to borrow abroad on their own responsibility. But even this did not suffice to fill the gap, so that further solutions had to be sought for. At the assemblies of the International Parliamentary Conference on Commerce held at Brussels and Rome the whole question of international agricultural credit was formally raised.

⁽¹⁾ B. DEGON: Le financement de l'agriculture et le marché international des capitaux. *Revue des Etudes coopératives*, No. 71. Neuilly, April-June 1939.

The first example and the most imposing organisation of this type is represented by the Bank of International Settlements which, being called upon to play an important rôle in the mobilisation of credit, is of interest also to the agricultural classes. The report of the committee of experts who in 1929 drew up the Young Plan, of which one of the main features was the creation of this bank, already had in mind an idea of the great advantages which the new institution might bring even to spheres outside those of its immediate interest. Among the more important of these subsidiary advantages the experts considered the possibility of creating a financial institution which would facilitate the increase of world commerce by financing certain projects mainly in the countries as yet undeveloped, projects which it would otherwise be impossible to undertake by ordinary means. "We are of opinion" said these experts "that by a careful development free from the excesses of competition the Bank will constitute a useful instrument for opening up new outlets to trade and stimulating supply and demand". Thus it was thought to create an organisation which in addition to its fundamental function would also serve to expand the sphere of world trade in the interests of the productive classes in general.

The steps taken by the League of Nations in 1931 towards the creation of the International Company of Agricultural Mortgage Credit answers directly to the needs of the agriculturalists chiefly of the countries of Central and Eastern Europe. This company was to concern itself principally with medium- and long-term credit. In particular it was:

(1) to make loans of sums repayable at long term with amortization or repayable at medium term with or without amortization to companies or institutions engaged in mortgage agricultural credit operations which, whether directly themselves or through the intermediary of other companies or institutions having their head office in the same country, make loans on first mortgages on immovable property forming part of an agricultural undertaking or serving such an undertaking;

(2) to issue and negotiate bonds of which the repayment value must not exceed the sum of its credits to the national companies, guaranteed by first mortgages inscribed with the name of these companies, belonging to them in full or held by them as pledge.

The company was to be founded with a capital of 250 million Swiss gold francs divided into shares of 2,500 francs. In addition it was intended to have a special reserve of 25 million Swiss gold francs which was to be constituted by repayable advances from the governments parties to the convention founding the company, such advances to be proportional to the contributions of the respective governments to the League of Nations. The new company was authorised to issue bonds to the amount of ten times the amount of the share capital paid up and this special reserve. Thus on the basis of the authorised capital (250 million Swiss gold francs) actually paid up and of the special reserve (25 million Swiss gold francs) the company could increase the issue of bonds to the extent of a maximum of 2,750 million Swiss francs. The company would have used the available sums in order to make loans to approved national credit societies, such loans to be repayable by means of an annual amortization within a maxi-

mum period of 30 years. The national credit societies in their turn were formally to promise to use the funds lent them exclusively for the making of loans guaranteed by first-class mortgages on immovable property situated within the country where they had their head office and forming part of an agricultural undertaking, or being used for such an undertaking. The loans were not to exceed 50 per cent. of the value of the immovable property offered as security.

In this way satisfaction would have been provided for medium- and long-term credit requirements, such facilities being of especial interest to all concerned in agrarian reforms and in the great works of land improvement and transformation.

At the preparatory conference of the second World Wheat Conference which was convoked at Rome on March 25, 1931 by the International Institute of Agriculture the question of short-term credit was also raised. Important delegations from many countries of Europe proclaimed the necessity of taking account also of the problem of short-term credit, such credit being called upon to play an essential part in restoring the economic and commercial equilibrium of agricultural undertakings and in facilitating their working. The insufficiency of liquid funds raised much complaint as it often forced agriculturalists who had to meet their engagements to sell their produce at the least favourable moment, and deprived them of the possibility of introducing the changes and adaptations in their production called for by the price changes. Furthermore the insufficiency of floating capital deprived agriculturalists of the means of maintaining, storing and preserving their wares, and forced them to pay high and sometimes even usurious rates of interest which completely absorbed all possible profits. The general impression left by the Wheat Conference was that a system of agricultural credit, called into being essentially to support agriculture during the passing of the product from the place of production to the market, would be able to alleviate the consequences of the agricultural crisis. The conference called upon the International Institute of Agriculture to continue its studies on agricultural credit and to do its utmost to generalise the organisation of short-term agricultural credit.

This project of an international bank of short-term agricultural credit prepared by the International Institute of Agriculture obtained the provisional approval of a meeting of representatives of governments and banks held in August 12-13, 1931 at the Institute itself.

As regards its function as a source of short-term credit the proposed bank was to limit itself to discounting bills presented to it by approved national credit institutions and based on loans made to agriculturalists or to agricultural co-operative societies. The duration of such loans would be three to nine months possibly extendable to a period of twelve months, and they would have to offer all the guarantees required by the Bank, taking note of the laws and customs of each country. The bills would have to bear the signature of the principal borrower and of the national credit institution approved by the Bank, and in cases where the loans were granted by the intermediary of regional or local institutions, the signatures of these would also be required. The funds of the new institution were to be used in the first place to facilitate a more rational disposal of agricultural products by making it possible for the producer to regulate his sales accord-

ing to market conditions. The Bank was to be established by means of a contract between the credit institutions of the countries interested in its foundation, which institutions would also undertake to subscribe the shares. The scheme was to be supported by a convention of the governments of these countries, which would assure the bank of all possible legal and fiscal advantages.

Thus there was in fact considered a form of commercial agricultural credit to regularise the circulation of wares and therefore to act as a force making for equilibrium between the demand and supply.

Unfortunately, however, the grave financial crisis of 1931 did not allow of the realisation of these projects of the League of Nations and the International Institute of Agriculture.

Other projects came to be formulated later on for the institution of international credit organisations, but about these lack of space prevents us from giving details. It suffices to mention that the foundation of an international credit organisation presupposes a number of technical or monetary conditions. For example, there must above all exist in the interested countries central organs of agricultural credit the support of which would be necessary for the international institution. These central organs in their turn would have to be so constituted as to offer every guarantee of honest and efficient administration, and would furthermore have to adopt certain uniform principles of management to the extent that they served as intermediaries to the interested institution. There would also have to exist a certain equilibrium between the currencies. Finally, without a certain minimum of international confidence the foundation of such an organisation would be impossible. However, the idea of this form of the international financing of agriculture always retains its value and is worth bearing in mind so that it may be examined anew at a more opportune moment. It will always offer a way of organising the normal disposal of agricultural products by means of credit management, thus avoiding the periodic return of over-production crises.

G. COSTANZO

TRADE RELATIONS OF THE U. S. S. R. WITH WORLD AGRICULTURAL MARKETS ⁽¹⁾

INTERNATIONAL TRADE IN FURS.

We may conclude this series of articles with a brief mention of the fur economy and fur exports of the U. S. S. R.. The importance of the U. S. S. R. as an exporter of furs is adequately shown by the fact that the Union has during recent years provided about 30 per cent. by quantity of the world export of furs, as against the U. S. A.'s 20 per cent., Canada's 17 per cent. China's 7 per

⁽¹⁾ This brief note completes our study on the part played by the U. S. S. R. in world agricultural markets, which has been appearing in the April, May and October, 1939 numbers of this *Bulletin*.

cent., Australia's 5 per cent., Iran's 5 per cent., Brazil's 4 per cent., Argentina's 3 per cent. and India's 2 per cent. Thus these nine countries account for about 93 per cent. of the world's fur exports, and amongst them the U. S. S. R. is clearly the most important.

The Russian fur exports also constitute quite an appreciable fraction of the total exports of the U. S. S. R., as is shown by Table XXIX:

TABLE XXIX. — *Fur Exports of the U. S. S. R.: 1932-37.*

Year	Quantity (Thousand tons)	Value (Million gold roubles)	Percentage by value of total exports of U. S. S. R.
1932	3.1	185.3	7.5
1933	3.5	168.9	7.8
1934	1.8	141.3	4.2
1935	1.6	132.0	4.2
1936	1.8	155.1	7.6
1937	1.3	153.6	6.2

This table shows that although Russian fur exports have during recent years decreased in volume by over a half, yet the proportion they constitute of total Russian exports reckoned in value has shown no correspondingly drastic reduction. Furs indeed remain one of the principal Russian export products, an importance which they possess in no other fur-exporting country in the world.

Fur exports have in recent years decreased less in value than in volume, and this despite the fact that fur prices did in general show a decline during the crisis years. The explanation here, as also in the cases of timber and flax, lies in the change in the character of the exported commodity, the export of the raw product steadily giving place to the export of the processed product which naturally fetches a higher price.

The importance which Russian furs have on the world market is also due to the fact that the U. S. S. R. enjoys almost a monopoly of many valuable furs such as sable, cross fox, Polar hare and white polecat, whilst for other important furs such as miniver, white fox, ermine, Persian she is easily the world's chief source of supply.

Caracul-breeding has undergone a considerable expansion, especially in the sovkhoses set up for the purpose. Caracul-breeding is not only a productive source of caracul furs, which are among the best furs for purposes of export, but serves also as basis for the production of caracul breeders, extending and consolidating the caracul-breeding activities of the kolkhozes.

Hunting is carried out on an especially large scale in the great areas of the north of the U. S. S. R., in the Far Eastern territories, in the mountainous areas of the Caucasus, etc., these areas all consisting largely of swamps and forests and being rich in fur-bearing animals of various sorts. For considerable sections of the population in these parts of the U. S. S. R. hunting, indeed, constitutes the chief or even sole source of income and determines the economic fate of many of the peoples in the U. S. S. R.

Because of the great importance of hunting, in 1936 a special Hunting Section was set up within the People's Commissariat for Agriculture with the task of creating a unified and planned policy for the whole hunting economy.

The Fur Export and Import Syndicate of the U. S. S. R., *Sojuzpuschnina*, has since 1930 been the only organisation concerned with the export of furs. It aids the professional hunters and even in the most remote districts supplies them with the necessary industrial goods, hunting requisites, etc.

Furs are exported principally from the Russian Soviet Federated Socialist Republic, which indeed accounts for 66 per cent. of the total fur exports of the U. S. S. R. Within the R. S. F. S. R. the following are the main contributing areas: the West Siberian Territory which provides 11.4 per cent. of the total Russian fur exports, the East Siberian Province which provides 7.5 per cent., the Northern Province 28 per cent, Gorki Province 1.5 per cent., the Tartar Autonomous Republic 1.1 per cent. etc. The republics of Central Asia, such as Kazakhstan, Uzbekistan, Turkmenistan and Tadzhikistan also produce considerable quantities of furs, mainly caracul. The Ukraine accounts for 13.8 per cent. of the total fur exports of the U. S. S. R.

In December 1926 an official standard for the exact classification of all commercial skins and furs was elaborated, thus making it possible to undertake a more useful classification of the furs according to their territories of origin.

For centuries the wealth of Russia in fur-bearing animals had seemed inexhaustible, but in the years preceding the War a decline in the supplies of the more valuable fur-bearing animals was becoming noticeable. This was due to the decline in the forest area and to the absence of all measures for the protection of the wild life inhabiting it.

The measures for the protection of fur-bearing animals and for the extension of the raw materials basis of the whole fur economy consist in a number of government decrees limiting or forbidding for a period of years the hunting of the protected animals within certain defined territories, and also in measures to expand supplies of new types of furs by acclimatising the necessary animals in the territories where natural conditions seem most favourable to such an attempt. In addition legal measures are being taken to protect natural resources, a hunting code is being issued etc.

The industrialisation of the U. S. S. R. has also had considerable influence on the fur economy of the U. S. S. R. Instead of the small domestic-industry unions occupied in the preparation of miniver and white hare—these being the only types of fur which were prepared before the War—there have now developed great industrial organisations in Kazan, Moscow, Leningrad, Viatka, Astrakhan and other cities. As recently as 1924-25 the fur industry employed no more than a few hundred workers and total production did not exceed 7 million roubles in value. In 1933, at the beginning of the second Five Year Plan, the fur industry consisted of 23 undertakings employing 22,000 workers, and the value of the product was 265 million roubles.

In the world fur trade auctions are, as is well known, of very considerable importance, for great quantities of furs coming on to world markets are disposed of through them. About a third of the world's furs come from the U. S. S. R.,

yet before the War these furs were disposed of exclusively in auctions held abroad. The U. S. S. R. when she resumed exports in 1920 used the traditional commercial channels, and sent the greater part of her fur exports to Leipzig and London, although a part was also sent to New York and Paris, where Russian furs were sold at the great auctions.

The ever-increasing importance of the U. S. S. R. in the world fur markets has, however, been reflected in the success of the international fur auctions held twice yearly at Leningrad since 1931 and at which the greatest fur firms of the world have been represented. The changes which sales in the U. S. S. R. and sales abroad have undergone in recent years are shown by the fact that whereas in 1933 nearly three-quarters of the Russian furs were still sold abroad now more than four-fifths of the sales are effected within the U. S. S. R. itself. The Leningrad auctions have thus become one of the most important channels for the export of Russian furs.

M. TCHERKINSKY

INTERNATIONAL CHRONICLE OF AGRICULTURE

BULGARIA

The economic position of Bulgaria, which had been good in 1937, continued to improve in 1938, although at a somewhat slower pace.

The total value of imports and exports amounted to 10,512 million leva in 1938 against 10,005 in 1937. Exports in 1938 were greater by 559 million leva than in 1937. The value of imports fell by 52 million leva. It should be noted that the figures for 1938 include the subsidies, making a difference of between 4 and 8 per cent. on the total value of imports and exports. The increase in the value of exports in 1938 was due to the rise in the prices of certain export goods.

Bulgaria's Imports and Exports.

Year	Imports				Exports				Balance
	Thousand metric tons	Index	Million leva	Index	Thousand metric tons	Index	Million leva	Index	Million leva
1929-33 (annual average) . . .	322	100	4,649	100	528	100.0	4,950	100	301
1935	276	85.7	3,009	67.7	327	61.9	3,253	65.7	244
1936	283	87.9	3,181	68.4	569	107.8	3,910	78.9	729
1937	328	101.9	4,986	107.2	687	130.1	5,019	101.2	33
1938	382	118.6	4,934	106.2	500	94.7	5,578	112.7	644
1938 (7 months) .	206	—	2,746	—	314	—	2,791	—	45
1939 (7 months) .	230	—	2,918	—	216	—	2,303	—	615

From January to April 1939 the value of exports fell sharply; mainly as a result of the fall in exports of tobacco and cereals. In the three following months, however, the value rose again, exceeding that of the corresponding months of the preceding year. Cereals were again exported and exports of tobacco and eggs increased.

The following table shows the exports of the principal agricultural products in 1938 in comparison with 1937. The increase in 1938 is clearly due to tobacco and fresh fruits. Of the latter, exports of grapes showed the biggest increase. Exports of other important products such as poultry, cereals, oilseeds and hides were considerably smaller.

Bulgaria's principal Agricultural Exports, 1937-38.

(Million leva).

Year	Eggs	Live & dead poultry	Cereals	Tobacco	Fruit	Oilseeds and derivatives	Raw and semi-manufactured hides
1937	430.1	196.4	957.0	1,609.8	369.3	343.8	280.2
1938	436.6	149.0	527.5	2,363.9	971.2	195.0	164.7

Internal trade also showed a satisfactory progress in 1938. Retail sales, goods traffic and total traffic on the railways were 12, 8.7 and 14.5 per cent. respectively greater than in 1937. Bank savings deposits rose from 13,060 million leva in 1937 to 14,365 million leva in 1938 (November 1).

The wholesale commodity price index (1934-35 = 100) rose from 116.6 in 1937 to 120.8 in 1938. The increase was due mainly to tobacco, spring cereals, vegetable and other seeds of which the crop was very poor in 1938. The higher prices of wheat, rye and other agricultural products on the home markets, maintained artificially by the Government, had a favourable effect on the purchasing power of farmers.

Foreign trade policy.

The system of foreign trade introduced by the order on imports and exports of June 4, 1937, which was in force in 1937-38, remained in force in 1938-39, although with modifications of which some deserve notice. Thus an order of February 13, 1939 allows the export of surplus quantities of sunflower seed, cotton-seed and vegetable oil available to importing countries with free exchange such as Belgium, the Netherlands and France, against payment of 100 per cent. compensation. Another order allows the export of Kachaval (a special type of cheese) on condition that 15 per cent. of the free currency obtained is handed over to the National Bank of Bulgaria. More important changes were introduced by the supplementary order of August 28, 1939, by which the payment of debts abroad is permitted:

1. to free-exchange countries with which no trade agreement has been concluded, by funds arising from exports to these countries, on condition that 75 per cent. of the foreign currency is handed over to the National Bank of Bulgaria;
2. to all other countries with the proceeds from the export of 108 specified articles on condition that a certain percentage is handed over to the National Bank. The percentage of foreign currency to be paid in to the Bank is increased by from 5 to 10 per cent.

The new feature of this order is that the National Bank has to buy all free currency on the market, including that handed over to it, at a compulsory premium of 35 per cent. and resell it for trade at a profit of $\frac{1}{2}$ per cent. Previously the National Bank had paid no premiums on that part of the free currency which had to be ceded to it compulsorily.

Control of exports. — Exports are controlled through the offices of the Institute of Exports, which was set up four years ago and which operates by virtue of a special law.

The control during 1938-39 concerned the following products; fresh and chilled grapes, tomatoes, fresh plums, apples, peaches, apricots, fresh and chilled strawberries, capsicum (in the husk), onions, cayenne pepper (ground), skinned tomatoes, strawberry pulp, peach pulp, apricot pulp, raspberry pulp, blackberry pulp, grape pulp, plum jam, etc; slaughtered stock, chilled, frozen and dressed meat, lard, dairy produce, eggs, dead and live poultry, preserved meat, etc. Special regulations fix the standards of quality, methods of packing, conditions of picking, sorting, etc. The Institute of Exports also directs and encourages exports, studies foreign markets, their possibilities and requirements etc. At the same time, in conjunction with the other State departments, it deals with the application of refrigerating technique to exports, the building of sheds for the preparation of fruits, the selection of agents and exporting firms, etc.

Trade treaties and agreements. — Bulgaria concluded the following new agreements: economic understanding with Germany, June 29, 1938 regulating the method of payment between Bulgaria and the former State of Austria; trade agreement, July 30, 1938, with Latvia; supplementary agreement with Greece, September 16, 1938, extending the agreement of May 25, 1938; trade agreement with France, September 6, 1938, by which the number of goods allowed into France at minimum tariff rates is increased; reciprocal *notes verbales* with the United Kingdom regarding the application of the trade agreement of November 12, 1925, and with certain British Dominions and Colonies; economic agreement with Italy, June 1939.

Stabilization of the price of agricultural products at a satisfactory level.

The following measures aiming at the stabilization of the prices of certain agricultural products remained in force in 1938-39.

The *wheat and rye* monopoly set up some years ago continues to operate. The Board for the Purchase and Export of Cereals bought all the wheat and rye from the 1938 crop offered to it, at a price of 3.40 leva per kilogramme for soft wheat, 3.70 leva for hard wheat and 2.75 leva for rye. The following prices were fixed for the 1939 crop: soft wheat, 3.50 leva; hard wheat, 3.80 leva; rye, 3.10 leva per kilogramme.

The 1938 *cotton* crop was bought by the Board for the Purchase and Export of Cereals at 36 leva per kilogramme for high grade cotton; 34 leva for medium grade cotton and 25 leva for low grade cotton. The following prices were fixed for the 1939 crop: 1st. grade, 36 leva; 2nd. grade, 34 leva; 3rd. grade, 25 leva per kilogramme free in the Board's warehouses. These prices apply to ginned cotton. The cotton is ginned by the Board, which then retains the seeds.

The trade in *flax and hemp* fibre remained free in 1938. Nevertheless to stabilize their prices at a higher level, the Board for the Purchase and Export of Cereals announced that it would buy flax and hemp fibre at the following minimum prices: hemp, 1st. grade, 19 leva per kilogramme; 2nd. grade, 17 leva; 3rd. grade, 15 leva; hemp waste, 1st. grade, 10 leva per kilogramme; 2nd. grade, 8 leva; flax, 1st. grade, 40 leva per kilogramme; 2nd. grade, 35 leva; 3rd. grade, 30 leva; flax waste, 8 leva per kilogramme. Flax and hemp prices for the 1939 crop are at present being fixed.

Agricultural credit.

Throughout 1938-39 the Agricultural and Co-operative Bank of Bulgaria continued its work of assisting co-operatives and individuals in their schemes for the qualitative and quantitative improvement of agricultural production. In particular it encouraged and assisted the output of goods required on foreign markets at a price satisfactory to the growers; with a view to assisting their commercial enterprise it supported the schemes of the co-operatives for the building of sheds, warehouses, and for the better treatment of agricultural products.

At the end of 1938 the Agricultural and Co-operative Bank had granted loans to the extent of 1,114,532,687 leva. In addition the co-operative societies granted loans amounting to 2,109,095,786 leva, inclusive of loans to artisans. The total credits to farmers and artisans amounted to 3,223,628,473 leva.

The Agricultural and Co-operative Bank performed certain operations in 1938 both on its own behalf and as a result of special laws, of which the following may be mentioned: the purchase of cocoons, the purchase and sale of tobacco, the distillation of roses, the supplying of farm implements and machinery, the supplying of fuels, oils and fats for farm tractors, copper sulphate for vines, etc.

Agricultural co-operative societies.

As a result of the measures taken by the Agricultural and Co-operative Bank of Bulgaria in support of the co-operative societies, the position of these societies has steadily improved in recent years. Their own funds and deposits are increasing, thus making it possible for them to develop their work to the advantage of rural property.

The following table shows the position of the agricultural co-operative societies in 1938 in relation to that in 1937.

Year	Number of societies	Number of members (individual and collective)	Own funds, capital & reserve	Borrowed funds	
				Deposits	Credit granted by the Agricul- tural and Co-operative Bank
			(million leva)		
1937	1,639	162,481	591.7	593.4	959.3
1938	1,694	174,304	602.4	672.1	1,077.1

Besides the agricultural credit co-operative societies, the Agricultural and Co-operative Bank also financed other co-operative societies as follows:

	Number	Credits (Million leva)
Vine-growers' co-operative societies	21	15.0
Livestock and dairy co-operative societies	16	2.2
Gardeners co-operative societies	8	12.0
Tobacco co-operative societies	32	423.3
Miscellaneous	18	64.7

Union of Farmers' Vocational Associations.

The "Union of Farmers' Vocational Associations" was founded in February 1937 by a special law whereby farmers must also form a "vocational association" in each village. Membership of these associations is optional, but the payment of the subscription is compulsory for members and non-members alike.

The aims of the Union are to form an organisation for the defence of the interests of the farmers, to carry out certain schemes of a social nature, and to work for the improvement of the cultural standards of the peasants as regards education and national feeling.

The representatives of these associations attend the councils of the communes and the meetings of the chambers of agriculture.

The Union has started to study certain social questions, such as peasant insurance, mutual medical assistance, etc. There is now a mutual assistance fund which pays compensation of 3,000 leva to the heirs of deceased members.

Agricultural insurance.

Agricultural insurance is organised by the Agricultural and Co-operative Bank and is working well. The position as regards insurance against hail in 1937, 1938 and 1939 is shown by the following table:

Year	Number of insurance policies	Amount insured (million leva)	Number of growers receiving payments	Amount of claims paid (million leva)
1937	194,930	1,381.7	34,034	33.5
1938	209,981	1,488.9	34,097	38.0
1939 ⁽¹⁾	243,976	1,770.0	—	—

⁽¹⁾ Provisional figures.

The position of animal insurance in 1937, 1938 and 1939 was as follows:

Year	Number of mutual insurance societies	Number of members	Number of animals insured	Amount insured (million leva)	Number of animals for which payments were made	Amount of claims paid (million leva)
1937	2,520	121,308	237,602	662.1	5,290	9.7
1938	2,716	159,915	312,603	974.6	8,005	16.8
1939 ⁽¹⁾	2,823	185,316	356,496	1,145.2	6,209	13.2

⁽¹⁾ The figures for 1939 cover the period up to November 11.

Land consolidation and internal settlement.

The consolidation of cultivated land continued more intensely in 1938-39 due to the increased credits allowed for this purpose in the budget of the Ministry of Agriculture and Lands.

During this period the preparatory work for the consolidation of the lands of 63 villages, covering an area of 204,656 hectares, was completed and the consolidation is now being carried out.

Internal land settlement continues to give good results.

FINLAND

During the year 1938-39 industrial conditions have been fairly good except in the timber industry, which has been in an unsatisfactory position since the end of 1937. This depression in one section of industry made itself felt to some extent over all branches of industrial activity, and through its influence on the rural economy has weakened the financial situation of the agriculturalists. Certainly the harvest of the summer of 1938 was very satisfactory, but the heavy fall in the price of wheat resulted in a decline in the total value of agricultural production. The rise in the prices of agricultural implements and more especially of labour caused by industrial and building activity has also had an adverse effect on agricultural profits. It is estimated that agricultural net returns were 10 to 20 per cent. below what they had been in the preceding year.

Commercial policy.

The agricultural year 1938-39 saw no noteworthy change in the commercial treaties concluded by Finland in the preceding year. The most important countries in Finland's foreign trade are Germany and the United Kingdom, these two countries accounting for more than 50 per cent. of Finland's foreign trade in 1938.

The commercial treaty with Germany concluded originally in 1934 is based on the clearing system. The trade with the United Kingdom is subject to quotas; the first Anglo-Finnish trade treaty dates from 1933; the more recent treaties have been based as far as possible on the principle of reciprocity.

The trade figures with the different countries for 1938 are in most cases slightly less than those of the preceding year; and only in the case of the trade with the U. S. A. and with Italy has the value of the trade shown a slight increase.

When Finland gained her political independence she had also to set up an independent custom tariff, and thus the first tariff was established in 1919. In the succeeding years, however, Finland was frequently forced by circumstances to modify this tariff. Hence a commission was appointed to draw up a permanent tariff, but it was able to complete its labours only during the course of last year, so that the new tariff entered into force at the beginning of 1939. Its aim is both to protect the different branches of industry by moderate duties and also to take account of the financial needs of the State.

Cereals market.

In the years before the War of 1914-18 the output of cereals in Finland was not sufficient to meet the needs of the country, mainly owing to the unfavourable climatic conditions and the relatively high costs of production. However, since attaining her independence Finland has continually sought to assure an adequate cereals production, such as is clearly very desirable in exceptional international circumstances.

The means first used for this purpose were import duties. Under the permanent tariff the base duty on wheat is now 40 penni per kilogramme, on rye 25 penni, on barley 1 markka and on oats 50 penni. These duties are, however, insufficient to assure an

adequate cereals production at remunerative prices, so that additional measures were taken to strengthen their effectiveness. Hence the "cereals law", in force since 1931, obliges the miller to add home-produced rye to all foreign rye and similarly home-produced oat-meal to all foreign oat-meal, the proportions of the mixture in both cases being fixed by the Council of Ministers. In autumn 1938 the obligatory mixing of the home and the foreign product was extended to wheat. For the 1938 harvest the Council of Ministers fixed the percentage of the home-product at 80 per cent. in the cases of rye and wheat and at 90 per cent. in the case of oat-meal.

In addition efforts are being made by means of wholesale purchases and storing to stabilize the cereals market and to assure remunerative prices. These measures have in fact succeeded in almost insulating the Finnish cereals market against price fluctuations in world markets.

Sugar market.

At the end of the War of 1914-18 Finland suffered from a grave sugar shortage, and hence it was decided to start beet-sugar production and a new sugar refinery was set up in the south-west of the country. In 1937 a second refinery was set up in the south-east and two others are being planned. Sugar-beet cultivation has been stimulated by the imposition of an import duty, and as this did not suffice to make an adequate production possible premiums were also paid to cultivators. In 1938 and 1939 the premium amounted to 3 penni per kilogramme of sugar-beet delivered to the old refinery and 5.5 penni per kilogramme delivered to the new refinery.

Live-stock produce market.

In Finland's agricultural production the products of animal husbandry are of much greater importance than cereals, and the country is indeed self-sufficing as regards live-stock products. Hence for agriculture to be profitable it is more important to have satisfactory prices for animal products than for cereals.

For this reason animal products have always been subjected to an import duty, which at present amounts to 10 markka per kilogramme for butter and cheese, 4 markka for eggs, 2 markka for pigmeat and 3 markka for beef. However, world prices were such that even with these duties Finnish prices were too low to be profitable for the home producers, and thus, for example, efforts have been made to stabilize the internal price of butter at a price corresponding to its cost of production and guaranteeing the producer an adequate return.

In recent times agricultural policy has abandoned all attempts to stimulate the production of butter for export, instead concentrating its efforts on obtaining a production adequate to satisfy home requirements at prices profitable to the producers. To attain this end and to stabilize the price of butter—which is the most important of Finnish animal products—premiums varying between 4 and 9 markka per kilogramme according to the month of the year have been paid on butter exports during the agricultural year under consideration. The payment of these premiums cost the State 109 million markka, whilst the stabilisation of the price of cheese cost 18 million markka and of the price of hens' eggs 20 million markka, not to mention the smaller sums devoted to the maintenance of the prices of less important products. The necessary funds were obtained partly by a special budgetary credit, partly from shares of the receipts of the import duties on oilcakes and oil seeds for animal feeding and of the excise duties on concentrated feeding stuffs and on home-produced margarine.

As the main aim of Finland's agricultural production is to satisfy the country's own needs, and as the level of prices, especially of livestock products, has tended to be abnormally low, efforts have been made by means of an intelligent propaganda to increase the internal consumption of these products. The newspapers, the cinema, pamphlets, pictures, have all been used in the service of this propaganda, which has aimed mainly at increasing the consumption of milk, cheese and eggs. This activity cost the State 1.5 million markka in 1938.

Land reclamation.

Of fundamental importance for the increase of Finnish agricultural production is the encouragement of land reclamation by means of State subventions. From 1923 onwards the State has continuously followed a policy of aiding land reclamation undertakings, such as the draining of marsh lands, the regularisation of water channels, the drainage or irrigation of cultivable lands. In 1938 a total of 29 million markka was devoted to the subsidising of drainage and clearing operations, and a further 13 million markka were made available for loans—although not all these funds were used during the course of the same year.

The tendency towards self-sufficiency, which is to be seen in what has already been said, is obvious also in the support regularly given to land-clearing operations since 1928. In 1938 more than 10,000 hectares of fields and pastures of interest to some 11,000 farms have been cleared, and premiums to the amount of 7 million markka paid by the State.

Agricultural credit.

As regards commercial credit, agriculture is in the first place served by the co-operative and the savings societies. To make it easier for small holders to obtain credit, the State in 1921 set up an Agricultural Financial Aid Society, which granted commercial credits to agriculture through the intermediary of agricultural loans societies and co-operative societies. In 1938 a law was passed and a decree issued to render the activity of this institution more effective by laying down more precise rules for the granting and employment of loans than those formerly existing. Loans may only be granted to cultivators owning not more than 15 hectares of arable land and who, from the financial point of view, are considered to be in need of such loans. Loans may be granted for the clearing of fields and pastures, for land reclamation, for the construction of new buildings or the repair of existing ones, and for the purchase of machinery. The loan may not exceed 60 per cent. of the sum needed for the project to be undertaken or the machines to be bought, and the sum granted to any one cultivator must not be more than 30,000 nor less than 1,000 markka. For the five years 1939-43 the interest rate must not exceed 4 per cent. The loan is to be repaid over a period of 5 to 20 years.

Improvement of rural housing.

Housing conditions in the country-side leave much to be desired, especially as regards hygienic conditions. It is therefore clearly desirable that an improvement be effected in rural housing, even if only to render country life more agreeable and so slow down the drift to the towns; thus a State commission has been set up to study the defects in the houses in the rural communes and to suggest means of remedying them. On the basis of proposals made by this commission steps have been taken to encourage the improvement of rural housing conditions by giving financial aid and by granting loans for repairs and reconstructions and also for the replacing of worthless old buildings by new

ones. A beginning has been made by trying to remedy the worst defects, especially as regards the housing conditions of large families. For the repair of houses belonging to owners of modest means financial aid is given to the extent of 50 per cent. of the estimated necessary expenses and not exceeding 4,000 markka per house. Loans may also be granted to the amount of 75 per cent. of the estimated necessary expenses and not exceeding 20,000 markka per house. The loan is the only form of aid allowed when it is a matter of improving houses inhabited by workmen but belonging to their employers. The 1938 budget carried a sum of 12 million markka for such financial aid and 3 million markka for such loans; and for the current year these appropriations have been repeated. It has been estimated that for the repair of all the defective houses a total sum of 600 million markka in loans and of 200 million markka in financial aid would be required. The present plan is to spread the State's aid over a long period of time, and to carry out the housing reconstruction whenever the unemployment figures are rising.

MISCELLANEOUS INFORMATION

Vine-growing in the world.

In a brief report presented to the Second National Congress of German Vine-Growers held at Bad Kreuznach on August 28, 1939 M. Léon Douarche, Director of the International Wine Office, gave some interesting information on world vine-growing. To show the importance of this branch of agriculture he pointed out that the total income provided by it is estimated at about 50 milliard French francs, this sum being divided among several millions of the world's inhabitants, that in addition vine-growing has several industries dependent on it as also the value of much property, and that almost everywhere it provides the State with a considerable revenue by way of taxation.

Unfortunately vine-growing is passing through a grave crisis, and already no less than eight international congresses have studied the possible remedies to be applied. Two dangers especially threaten vine-growing, namely over-production and under-consumption. As regards the over-production, this is due to the extension of the areas under vine and the development of vine-growing in areas where it was formerly almost unknown, the adoption of new and more productive methods of cultivation and cutting, etc. In Europe only the less important wine-producing countries are showing a decline in the area under vine, whereas all the more important wine-producing countries—France, Italy, Spain, Rumania, Portugal, Yugoslavia and especially the U. S. S. R.—are either maintaining or even increasing the areas under vine. Since 1900 the area under vine has increased by 450,000 hectares in Europe alone, and North Africa also shows an increase of 290,000 hectares. From 1900 till 1937 the vineyards of the world have grown from 6.6 to 7.5 million hectares, mainly owing to the development of vine-growing in South America, Australia and South Africa where it was almost unknown 60 years ago.

The other enemy of vine-growing is under-consumption, which is due to various factors such as the absence of the Russian market, which took great quan-

tities of the better wines before the War of 1914-1938, but is now practically closed to foreign wines; the various prohibitions which temporarily closed the markets of the U. S. A. and which were later replaced in Sweden, Norway, Finland and Canada by monopolies leading to a limitation of wine consumption; the competition of certain beverages which falsely take the name of wine, and of others such as beer, mineral waters, coffee and tea which have brought it about that even in France, where wine is the national drink *par excellence*, consumption remains stationary and since 1936 even shows a decline; and finally mention must be made of the excessive taxation which raises the price of wine and so reduces consumption. Official statistics show that for over a century wine exports from France have never been as low as they are now. 60 years ago French wine exports reached a maximum of 4 million hectolitres, after which they fell steadily till in 1937 they amounted to no more than 860,000 hectolitres.

The following table giving the wine exports of the principal producing countries needs no further comment.

Wine Exports of the principal Producing Countries.

(Million hectolitres).

Country	1900	1904-1913	1924-1935 Annual average	1938
Australia	32	39	97	175
Chile	1	2	36	140
Cyprus	69	50	63	59
France	1,905	2,128	1,202	1,028
Germany	216	184	39	41
Greece	305	485	798	379
Hungary	760	930	149	362
Italy	1,871	1,272	1,249	1,433
Portugal	820	1,042	882	832
Spain	3,416	2,980	3,588	500
Union of South Africa	0.2	3	28	85
	<u>9,404.2</u>	<u>9,115</u>	<u>8,131</u>	<u>5,034</u>

By way of conclusion the author examines the various means which might be employed to check the crisis. Amongst others he considers such a reorganisation of trade as would allow of a return to the normal flow of international exchanges, the adoption of measures to stimulate wine consumption in general and to render retail wine sales less difficult, and the finding of new markets. He would wish to see a return to a freer international trade regime, but fears that to hope for such a change is to ask for Utopia.

Considering the remedies as yet proposed, they are all rather in the nature of palliatives of which the possible effects would only slowly make themselves felt. In so far as the wine crisis is due to over-production an immediate and complete prohibition of the planting of new vineyards could certainly prove very helpful. Whilst in so far as the crisis is a matter of quality, a radical improvement in methods of cultivation, in the selection of stocks, and in the methods of wine-making would be necessary.

**NEW PERIODICALS RECEIVED BY THE LIBRARY
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- ADELAIDE** stock & station journal. Adelaide, v. 36 (1939)-, hebd. 5/-.
(AGRARNI problemi) Аграрни проблеми. София, v. 1 (1938)-, bimestr. Leva 10 par fasc. [Rural problems.]
- BALGARSKOTO** droujestvo za sotsialen napredak. Sofia. Известия на Българското дружество за социален напредак. София, v. 3 (1937)-, trim. [Contents also in French.] [Second title in French: Informations de l'Association bulgare pour le progrès social.]
- DAIRY** situation in Canada. Ottawa, v. 1 (1937)-, trim. \$ 1. (Canada. Dominion bureau of statistics. Agricultural branch). [Mimeographed.]
- (ЕКОНОМИСТ) Економистъ; списание за общостопански, частностопански и счетоводни въпроси. Варна, П-ца "Войниковъ", v. 1 (1939)-, trim. Leva 200. [Economist; review of general and private economy and accountancy.]
- O ESTADO** de S. Paulo. v. 65 (1939)-, q. 75\$ int.; 250\$ étr.
- FORESTRY** abstracts. Imperial forestry bureau. Oxford, v. 1 (1939/40)-, trim. 20s. int.; 25s. étr.
- FORTNIGHTLY** review of business and economic conditions in South and Central America, Portugal, etc. Bank of London & South America, London, v. 7 (1939)-, every two weeks.
- INFORMACIONES** argentinas. Buenos Aires. Division de publicidad y propaganda. 1938-, bimens. (Republica argentina. Ministerio de relaciones exteriores y culto. Direccion de investigaciones, archivo y propaganda).
- INDOCHINE.** Office indochinois du riz. Feuille mensuelle de renseignements. Saigon, 1937-, mens.
- INSTITUTO** central de fomento economico da Bahia. Boletim. Bahia, nº 1 (1938)-, irr.
- JOINT** stock land banks. Washington, Farm credit administration, 1939-, trim.
- LES;** ústředni časopis pro lesnictví, myslivost, dřevní průmysl a obchod. Praha, Ústřední jednota českého lesnictva, v. 19, no. 9/10 (avr. 1939)-, déc. K. 80. [Formerly: "Československy les"]. [The Forest.]
- MONTHLY** crop report. The Ontario department of agriculture. Statistics branch. Toronto, 1934-, mens.
- MONTHLY** dairy report. The Ontario department of agriculture. Statistics branch. Toronto, 1938-, mens.

(*) *List of abbreviations:* bihebd. (biweekly); bimens. (twice monthly); bimestr. (every two months); déc. (every ten days); étr. (foreign price); fasc. (copy); hebd. (weekly); int. (home price); irr. (irregular); mens. (monthly); no. (number); N. S. (new series); p. a. (per annum); q. (daily); sem. (half yearly); s. (series); trihebd. (every three weeks); v. (volume); trim. (quarterly).

N. B. — Between brackets [/] are given translations and explanatory notes not appearing in the title of the review.

- PAN AMERICAN book shelf. [A list of books recently received in the Columbus memorial library], Washington, Pan American Union, v. 1 (1938)-, mens. [Mimeographed.]
- PRZEGLĄD statystyczny; organ Polskiego towarzystwa statystycznego. Warszawa, v. 1 (1938)-, trim. Zł 15. [Second page of title in English: Statistical review]. [Contents also in English.]
- (RAZVOJ narodne privrede ou Jougoslaviji). Развој народне привреде у Југославији. Београд, v. 11 (1939)-, mens. (Народна банка Краљевине Југославије. Одељење за економска изучавања). [Formerly: "Bulletin de la Banque nationale du Royaume de Yougoslavie".] (L'activité économique en Yougoslavie.)
- RUBBER news letter... Prepared by the Leather and rubber division. Washington, Bureau of foreign and domestic commerce, v. 13 (1939)-, bimens. \$ 1.- int.; \$ 3.- étr. [Mimeographed.]
- SELECTION of recent additions to the library. [Geneva], 1937-, mens. (International labour office. Library).
- SITUATION de l'industrie laitière au Canada. Ottawa, v. 4 (1937)-, trim. \$ 1.- (Canada. Bureau fédéral de la statistique. Branche de l'agriculture). [Mimeographed.]
- (SOTSIALISTICHESKOE seliskoe khoziaïstvo). Социалистическое сельское хозяйство. Москва, Сельхозгиз, 1939-, mens. Rb. 30.- [Formerly: "Социалистическая реконструкция сельского хозяйства"]. [Socialistic rural economy.]
- STOCKHOLM. Konjunkturinstitutet. Meddelanden från Konjunkturinstitutet. Ser. A. Stockholm, no. 1 (1938)-, irr.
- STOCKHOLM. Konjunkturinstitutet. Meddelanden från Konjunkturinstitutet. Ser. B. Stockholm, no. 1 (1939)-, irr.
- STOCKS of dairy and poultry products. Ottawa, v. 19 (1936)-, mens. \$ 1. (Canada. Department of trade and commerce. Dominion bureau of statistics. Agricultural branch). [v. 19 (1936)- v. 20, no. 3 (1937) under the title: "Production of butter and cheese and stocks of dairy and poultry products"]. [Mimeographed.]
- SÜDOST-ECHO. Wien, v. 9 (1939)-, hebd. Rpfl. 25 par fasc. int.; Frs. 0.25 par fasc. étr.
- SUGAR journal. New Orleans, v. 1 (1938/39)-, mens. \$ 2 int.; \$ 3 étr.
- TASMANIAN farmer. Launceston, v. 1 (1937/38)-, mens. 6/-.
- UNION SOVIETIQUE. Trade delegation in the United Kingdom. Monthly review. London, v. 9 (1936)-, mens. 6/-.
- WORLD price movements... Wholesale prices; cost of living. Ottawa, v. 1 (1935)-, trim. 25 cents par fasc. (A quarterly supplement to "Prices and price indexes"). [v. 1 (1935)-v. 2 (1936) under the title: "Price movements in other countries"]. [Mimeographed.]

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